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Peaches from trees sun-kissed in another continent. Grapes from vineyards half a world away. Oranges new taken from crates labelled in a land where December is summertime. Fruit from the four corners of the world . . . a display once impossible, taken for granted today, part of everyday life. Yet, a triumph over odds.

Over treacherous weather. Over disease. Over unending attack by insect pests. And, with ever-mounting success, over the most insidious and widespread enemy of all: the vast, voracious, unseen host of nematodes — root-infesting eelworms of microscopic size, present wherever the soil is cultivated. Every species of plant is believed to be attacked by one or more species of nematode, and damage can be immense. Citrus, grapes, bananas, peaches, pineapples, strawberries. Cotton and sugarcane, tea, tomatoes, tobacco . . . the sum total every year of destruction to important crops by nematodes is beyond computation. But now at last there is promise of complete success. By soil fumigation with advanced chemicals such as Nemagon, developed by Shell.

Nemagon has already achieved outstanding results in eelworm control - and at very low dosage rates leading to marked economies in transportation and handling costs. More important still is the fact that, unlike most soil fumigants, it can safely be used around many growing crops without harming the plants — a tremendous advantage wherever established perennials are concerned. In addition, it can now also be combined, in granule form, with fertiliser mixtures, offering at once both a shield and a spur to the crop. With its partner D-D, Nemagon will help to make the world's fields still more fruitful.

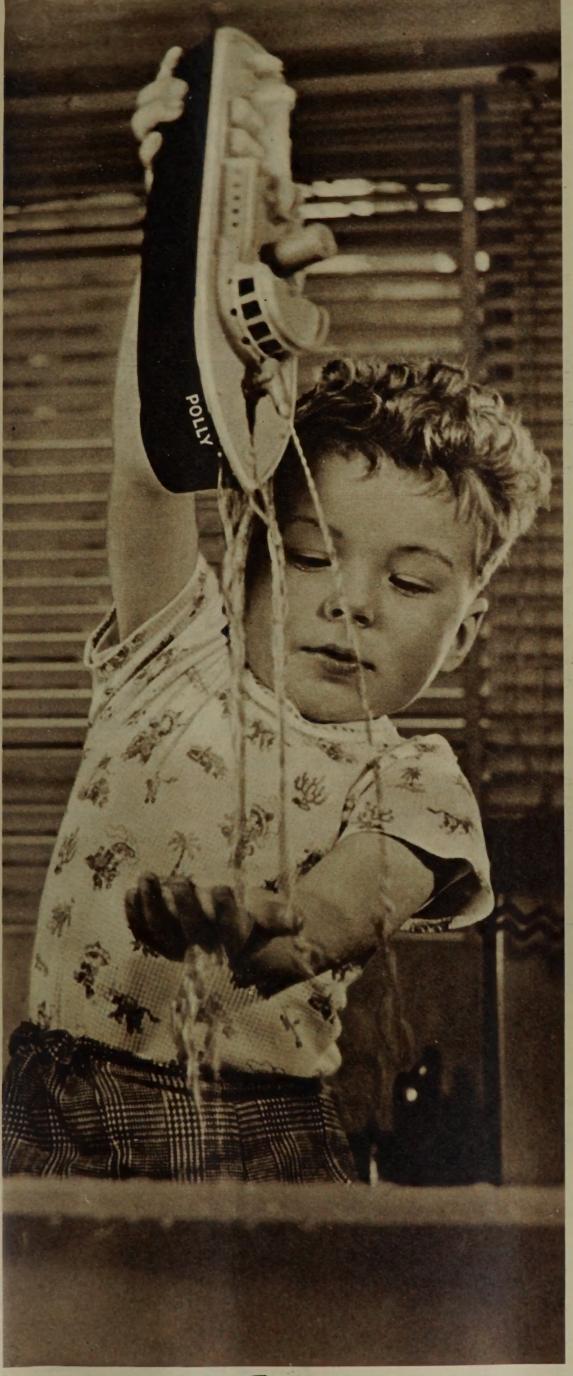
Nemago

Meloidogyne spp.

Nemagon was the fifth in the series of new Shell pesticides to be introduced to world markets. Now, with a sixth-Phosdrin — the circle of pest control is virtually complete. Aldrin for insects in the soil itself. Endrin for those which attack foliage and flower. Dieldrin for persistence and important public health uses. Phosdrin for close-to-harvest application, Nemagon and D-D for eelworm control. Between them, they offer control of almost every significant world pest. Root - Knot nematode x 100

Whatever Shell does, Shell does well.





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And not only afloat. Ashore too, many industries find important uses for these remarkable *Shell* synthetic resins, and many articles in the home will benefit from their outstanding durability and strength. Domestic appliances with *Epikote*-based finishes will still delight the houseproud eye after many years of use. *Epikote* resins have a shining future in front of them—in many ways.

Other Shell chemicals are well in the picture. The washing-up bowl provides an example of the use of Carlona polyethylene; the sun-blinds and floor-tiles of Carina polyvinyl chloride. Even the photograph was processed with the help of Shell ethanolamines. If you have a process calling for industrial chemicals, call on Shell. Whatever Shell does, Shell does well.

Epikote Trade Mark

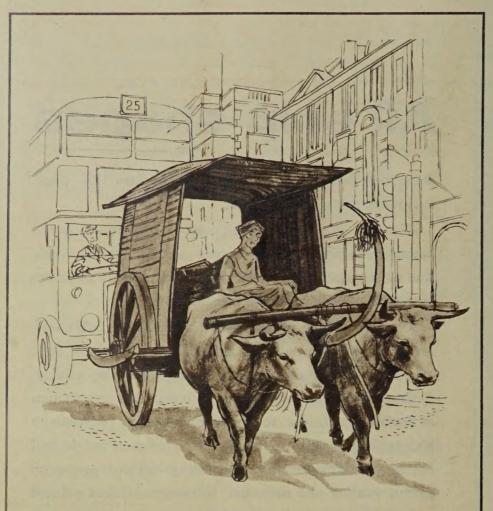
Epoxy resins

The Good Ship Polly is made of polystyrene.

The Carinex polystyrene range, manufactured by

Shell, is one of the most comprehensive available, and the three main groups of basic polymers, toughened grades and styrene acrylonitrile copolymers cover the widest range of applications—from model ships to refrigerator parts. Ask your Shell Company for full details. Shell chemicals serve virtually every industry.





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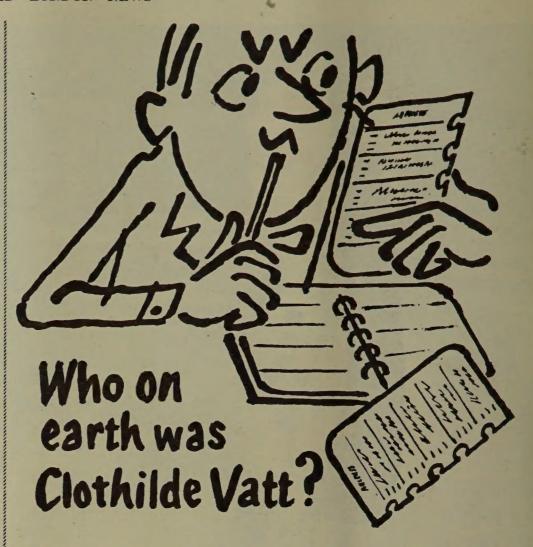
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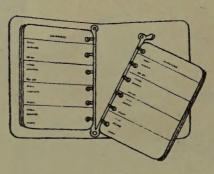
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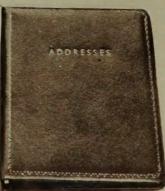
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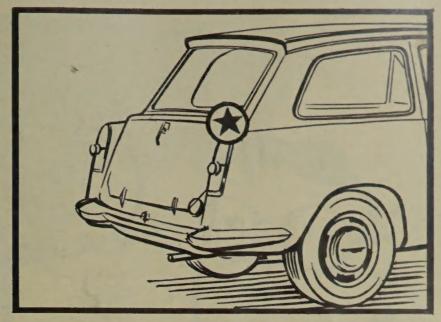
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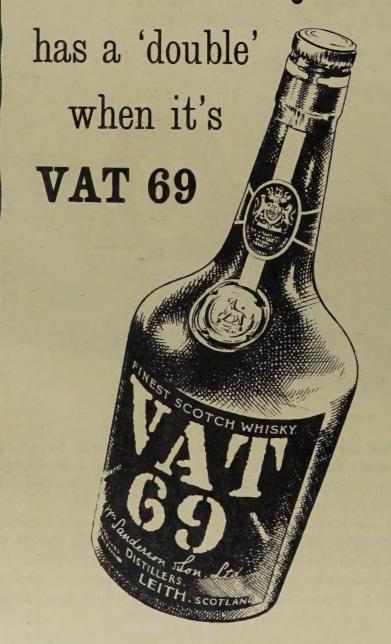
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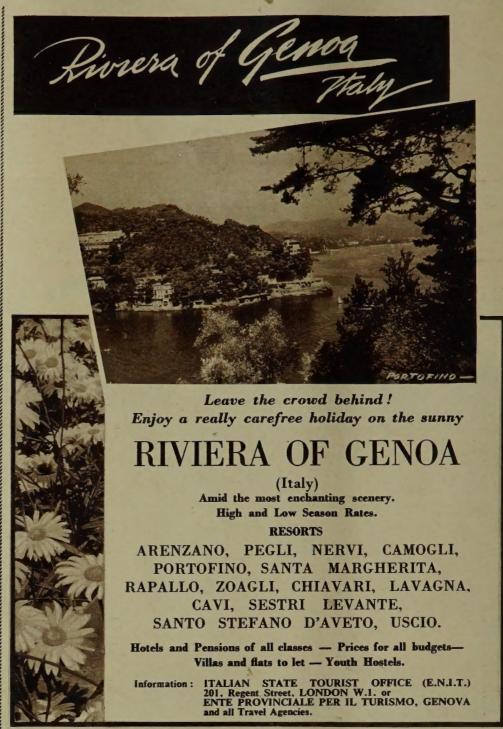
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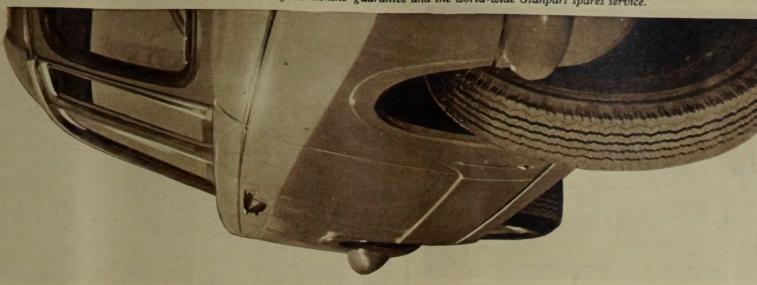




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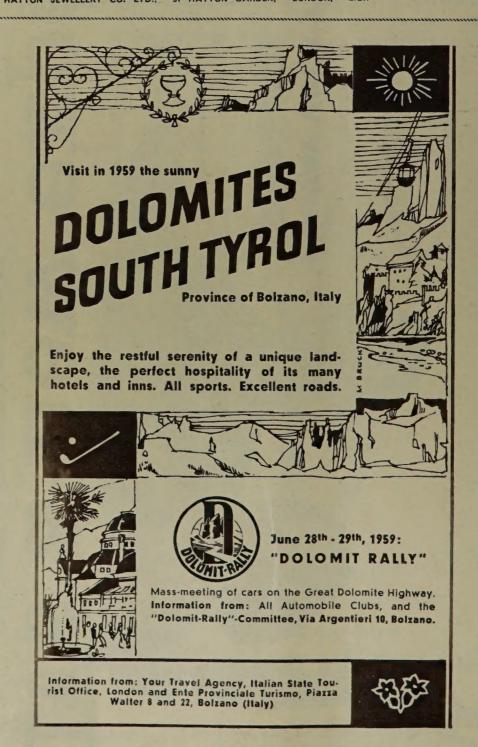
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SATURDAY, APRIL 25, 1959.



ON HIS ARRIVAL IN ASSAM: THE DALAI LAMA, LEFT, BEING GREETED BY INDIAN OFFICIALS NEAR TEZPUR.

The Dalai Lama arrived in Tezpur, Assam, from the Indian territory known as the North East Frontier Agency on April 18, month after his flight from Lhasa began. In Tezpur he made his first public references to the Tibetan uprising in the form of a statement issued to the Press. In it he denied emphatically that he had come to India under duress, at the Communist Chinese authorities had claimed. (As this statement was issued, Mr. Chou En-lai, the Communist Chinese Prime Minister, repeated in Peking that the Dalai Lama had been abducted to India and expressed the hope that he would be able to free himself from rebels and to return to the motherland.) The Dalai Lama's statement began with a

re-affirmation of Tibet's desire for independence, and included a review of relations between Tibet and Peking since 1951, when—under pressure from the Chinese Government—an agreement made between Tibet and China. The Chinese promise to Tibet of autonomy had been broken after the occupation of Tibet by Chinese armies. In conflicts between the Tibetans and Chinese which had continued since 1955 the Chinese forces had destroyed monasteries, killed many lamas and used monks for forced labour. The Dalai Lama thanked the people and Government of India for the welcome given to him and for granting him asylum. From Tezpur, he was to travel to Mussoorie.



By ARTHUR BRYANT.

HOW proud my dog Jimmy would have been!—at least, I think he would have been proud. He might, on the other hand, have been ashamed! For Jimmy, a rough-haired terrier, was the greatest catcher, or perhaps it would be truer to say pursuer—for he was given little help—of rabbits I have ever known, and that his master, of all people, should have been asked to form a Rabbit Clearance Society and should have promised to try to do so, would have struck him as a dispensation of Providence as strange as that which gave

him, a little wild hunter, on a far September day on the Boscobel cliffs nearly twenty years ago, a master so little interested in sport and so lamentably inept in its pursuit. But in those hungry days, with a masterless dog's instinct telling him that stormy winter was approaching and that picnic baskets and sandwich packets would soon be smelt and seen no more on the desolate, deserted beaches of North Cornwall, any master was better than none; and, finding one and a tender-hearted mistress who was prepared to offer him a meal-and not just one meal, but a regular succession of meals—a makeshift string collar and lead, and, most rejoiced at of all, a free, escorted journey away from the Atlantic gales and the starvacre rocks to a comfortable and even, by a waif's standards, luxurious home in the sheltered Buckinghamshire pastures, the little terrier made his choice, accepted what the Fates had sent him with gratitude and refused to look a gift-horse, or rather giftmaster, in the mouth. He took him for better or worse, and, having once given his loyal heart and taken him, there was no turning back and no repudiation of him even when he discovered that his acknowledged master could catch neither rabbit nor rat and, more inexplicable still, didn't even seem to want to. True, he would often, whenever, that is, the chance offered, run away and leave his immobile master to his scribbling and, when he discovered his absence, unavailing shoutings and lamentations, but after a few hours of tireless bliss in the neighbouring hedges and woods, he invariably returned for his supper, covered with mud and bits of bramble and with a look of recollected glory in his halfshamefaced eyes. And many a Buckinghamshire, and later Gloucestershire and Dorset, rabbit ended his days between those sharp white fangs and was borne home, projecting from either side of the little terrier's mouth like some gigantic moustache,

to be displayed in pride to his beloved mistress before being consumed, all but the tail and ears, in some private corner of the garden. I can still see that stuggy tail and the long hind-legs hiding the rest of the intent little dog as he enjoyed his meal in a recess of the old seventeenth-century redbrick wall that enclosed my Claydon garden; they were hungry days, for the Germans were harrying hurope and rations were short, and appropriate hand for a terrier, however dearly loved, hard to come by. So rabbits were worth eating with the per method and thoroughness, fur and all.

that Jimmy hunted rabbits merely for his early days as a

stray running wild on the Cornish cliffs he can have known very little other food. He was as great a sportsman in his canine way as Thomas Assheton Smith or his fellow Master of the Quorn, George Osbaldeston, the "Squire of England." Long after the return of peace and ample meals he pursued every rabbit he saw and a great many more he never saw at all, with indomitable ardour, even though he knew that his silly master, who without the slightest evidence believed that rabbit's



FORCED TO RESIGN OWING TO ILL HEALTH: MR. JOHN FOSTER DULLES, THE UNITED STATES SECRETARY OF STATE SINCE 1953.

President Eisenhower announced on April 15 the resignation of Mr. John Foster Dulles as Secretary of State. In February Mr. Dulles entered the Walter Reed Military Hospital, Washington, for meternia operation and it was later announced that he was suffering from abdominal cancer of undetermined extent—Mr. Dulles had undergone an operation for cancer two years previously. After radiation treatment and a period of convalescence in Florida, Mr. Dulles returned in early April to the hospital for further observation and treatment. On April 14 it was disclosed that the abdominal cancer had spread to other parts of the body, including the lower neck. After valuable diplomatic experience in World War One—he was one of President Wilson's advisers at the 1919 Versailles Peace Conference—and after twenty years with an international firm of lawyers, he became in 1944 chief adviser on foreign affairs to Governor Dewey, who was then presidential candidate. In 1950 he was given the task by Mr. Truman of formulating the Japanese Peace Treaty. In 1953 he became Secretary of State. Since then he has adhered to a rigid policy of resistance to Soviet threats and has attached prime importance to unity among the Western Allies.

Photograph by Fabian Bachrach

fur was bad for a well-fed dog's digestion, would subsequently struggle with him for his kill and unfeelingly wrest it from him. He did not only hunt rabbits; he hunted everything—foxes, badgers, rats, deer, snakes, stoats, birds of all description (he twice performed the astonishing feat of catching a pheasant on the wing) and even mice, and once in old age, when the Royal Horse Artillery were saluting the Queen's Accession in Hyde Park during his morning walk, he chased the galloping King's Troop from the latitude of Grosvenor Gate in a vast circle all the way to Marble Arch! Indeed, it was characteristic of Jimmy's innate sportsmanship that even in dreary

post-war London he should have always succeeded in finding game of a sort; the neighbours' cats, though never those of his own household which he treated with well-bred disdain, could always be sure of a brisk run to the nearest area railing, while any mouse's nest in the hole of a Hyde Park tree was certain to be winded by that busy, questing nose and dug up with frantic barkings if there was any possible means of approach to it. Regular visitants to the Serpentine in those early post-war years can probably still recall the shrill

barking that invariably accompanied this little terrier's pre-matutinal inspection of the railed-in area at the east end of the lake which at that time he clearly believed, and, I suspect rightly, to harbour rats and to reach which he always made a detour through the water round the end of the railings. Getting him out and silencing his over-robust expression of enjoyment was one of the normal incidents of my morning walk, as was rescuing the Royal ducks from the predatory rushes of this universal Nimrod.

But the tragedy of Jimmy's life, if it can be called a tragedy -for nothing ever defeated him except death itself, and even that after years of staunch and unexpected survival—was that his master was so lacking in sporting instincts and, far from assisting him in his unceasing efforts to keep down game and vermin, as often as not took the side of the hunted and frequently, almost unforgivably, enabled the latter to escape! That he should now be seeking to form a Rabbit Clearance Society and setting out to discuss with his neighbours and the local authorities the means of establishing one would have struck him as both incongruous and at the same time very satisfactory an example of things coming right in the end and being, at the close of all, as they should be. Indeed, if the Rabbit Clearance Society ever takes shape and meets, as possibly it may, in the writer's drawing-room, the little dog's body, buried a few feet away, will, I suspect, be reanimated by that ardent and excited spirit and appear at the window barking furiously until he has been admitted to take his familiar place in his own special chair by the fireside. And when, under his compelling chairmanship, a motion has been carried. nem. con., that rabbits are the enemy of man and dog and should be relentlessly and continuously pursued and exterminated, Jimmy of Wessex, Rabbit Clearance Society Chair-dog.

will, I feel certain, propose from the Chair that the proceedings be adjourned for an immediate hunt in the park and woods below the house. And, barking like the trump of Judgment Day and followed by his hopeless but, for the nonce redeemed, master and his far more sporting and talented neighbours and fellow-occupiers, he will lead the field in a joyous visit to every rabbit track and hole in the vicinity until every little furry nibbler in the district has vanished for ever in a clearance more thorough and destructive than any myxomatosis or plague known to vet or pest controller. And after that, I fancy, it will be the

turn of the cats!

FLOWERS FOR KING HUSSEIN: THE KING OF JORDAN ARRIVING AT NORTHOLT FROM THE STATES RECEIVES A BOUQUET AND A CURTSY FROM THE AIR HOSTESS.

ROYAL OCCASIONS: THE ROYAL FAMILY AT BADMINTON; AND KING HUSSEIN IN ENGLAND.



KING HUSSEIN INSPECTING THE R.A.F. GUARD OF HONOUR AT NORTHOLT, WHEN HE FLEW IN ON APRIL 19

FOR A PRIVATE VISIT TO LONDON. HE LATER SAW THE QUEEN AT WINDSOR.

On April 19 King Hussein of Jordan arrived by air in London from the United States. This is a private visit and he consulting specialist for his recurrent sinus trouble. Later the same day he drove to Windsor for luncheon with the Queen. It was expected, however, that he would have some discussions with the Government and see number of old friends.



AT BADMINTON:
THE QUEEN WITH
THE QUEEN MOTHER
AND PRINCESS
MARGARET IN A HAYWAGON GRANDSTAND.



UNDAUNTED BY THE WEATHER AT ONE OF HER FAVOURITE OCCASIONS.
THE QUEEN WALKS THROUGH THE MUD AT THE BADMINTON TRIALS.



MRS. SHEILA WADDINGTON, THE WINNER FOR THE THIRD YEAR RUNNING, TAKING AIRS AND GRACES OVER A JUMP IN THE LAST EVENT OF THE GREAT BADMINTON EVENT.

The Badminton Horse Trials, which took place on April 16-18, were dogged by bad weather and most of the park was a quagmire and some of the jumps had to be modified or taken out. The Queen, the Queen Mother and Princess Margaret all attended and saw Mrs. Sheila



THE QUEEN PRESENTING THE CHALLENGE CUP TO MOST. SHEILA WADDINGTON, THE WISE. IN STREET THE BADMINTON HORSE TRIALS FOR THE THIRD YEAR IN SUCCESSION

Waddington (formerly Miss Sheila Willcox) win the Great Badminton cant with 4.34 penalties. Second was Mr. D. Somerset using Countryman with 10.95 per Little Badminton event was won by Miss S. Resler riding Miss B. E. Shaw's Double 1.

A MEMORIAL SERVICE FOR MISSING FRIENDS WAS HELD ON APRIL 19 AT THE DESERTED WARTIME BASE AT KELSTERN, LINCOLNSHIRE, AT A REUNION OF FORMER CREWS OF THE NOW DISBANDED 625 LANCASTER SQUADRON. THE REV. R. L. W. PRATT, THE PADRE AT THE NEARBY R.A.F. STATION OF BINBROOK, CONDUCTS THE SERVICE



THE RT. REV. F. P. COPLAND SIMMONS IT THE ROBES HE WILL WEAR AS MODERATOR OF THE GENERAL ASSEMBLY OF THE PRESBY-TERIAN CHURCH OF ENGLAND. HE IS TO BE INDUCTED ON MAY 4 AND CEREMONIALLY WORE THE ROBES OF OFFICE AFTER A RECENT SERVICE AT ST. ANDREW'S CHURCH, FROGNAL, LONDON, N.W., OF WHICH HE III MINISTER.

FROM A SQUADRON REUNION-TO THE DARTFORD-PURFLEET TUNNEL.



A TRADITIONAL WELCOME FOR THE NEW RECTOR OF ST. ANDREWS UNIVERSITY: LORD BOOTHBY REPLIES TO THE ADDRESS OF WELCOME AT THE WEST PORT. Lord Boothby, who was installed on April 17, was subjected to the traditional indignities reserved for recipients of this honour. On this occasion the main incident was attempt by women students to "kidnap" him in an ancient car. The attempt was foiled by men, who removed the ignition key.



AT AN IMPROVISED ALTAR.

RECENTLY ERECTED IN THE BOTANICAL GARDENS, HONG KONG: A BRONZE STATUE OF KING GEORGE VI WEARING THE ROBES OF STATE AND IMPERIAL CROWN.

A bronze statue of King George VI was recently erected in the exceptionally beautiful setting of the Botanical Gardens. It is the work of the sculptor Gilbert Ledward, R.A., and was commissioned in 1938 by the Government of Hong Kong to commemorate the centenary of the colony's foundation. Its construction was delayed during and after the war.

during and after the war.



A STRIKING STATUE OF EARL LLOYD GEORGE: LADY MEGAN INSPECTS THE CLAY FIGURE FOR HER FATHER'S STATUE. The Welsh National Statue of the late Earl Lloyd George is to be erected on a 10-ft. stone plinth in Cathays Park, Cardiff. It is soon to be cast in bronze in London, and is the work of the young sculptor, Mr. Michael Rizzello. Lady Megan is seen here in the artist's Hampstead studio.



THE LORD MAYOR OF LONDON WITH OFFICERS OF THE N.A.T.O. WARSHIPS VISITING THE POOL OF LONDON, TO MARK THE TENTH ANNIVERSARY OF N.A.T.O.

Our photograph, taken in the Mansion House on the occasion of the reception, shows (l. to r.):
Commander M. O. Vermynck (Belgium), Captain P. Wurtz (Denmark), the Lord Mayor, Sir Harolo
Litt. Captain B. N. Sinclair, D.S.C. (Royal Navy), Commander H. A. J. Bourgau (France),
Lord Lander S. H. de Boer (Netherlands) and Commander Mackenzie, Admiralty Liaison Officer.



A HANDSHAKE UNDER THE THAMES AS THE ESSEX AND KENT SECTIONS OF THE DARTFORD-PURFLEET TUNNEL WERE CONNECTED.

The two sections of the Dartford-Purfleet tunnel were linked during the week-end of April 18-19 when the last few feet of intervening chalk were removed. Work on the £11,000,000 project began two years ago and it is hoped the tunnel will be open to traffic in 1962.

DANISH ROYALTY IN LONDON; THE INDIAN CRICKETERS, AND OTHER HOME ITEMS.



ON ARRIVAL AT LONDON AIRPORT TO BEGIN THEIR SUMMER TOUR: THE INDIAN CRICKET TEAM WHICH IS CAPTAINED BY MR. D. K. GAEKWAD (FRONT RIGHT), AND MANAGED BY THE MAHARAJAH GAEKWAR OF BARODA.

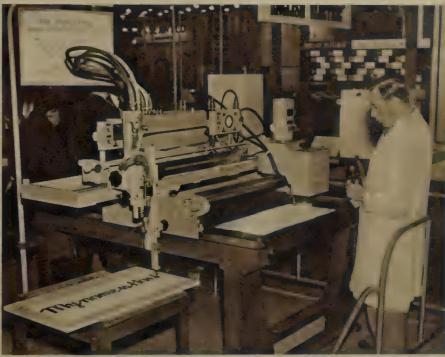


A NEW LOOK FOR ONE OF LONDON'S MOST FAMOUS STREETS UNDER THE GAZE OF ST. PAUL'S: BEHIND THE MASSED SCAFFOLDING THE NEW BUILDINGS OF CHEAPSIDE ARE TAKING SHAPE.

The time is drawing nearer when the famous Bow Bells will be heard again in London. On the extreme left is the church tower of St. Mary-le-Bow, and below it the aptly-named "Bow Bell House." Beyond are the new office buildings constructed for the Bank of England.



A GENERAL VIEW OF PART OF THE ENGINEERING, MARINE, WELDING AND NUCLEAR ENERGY EXHIBITION WHICH IS OPEN AT OLYMPIA, LONDON, UNTIL APRIL 30.



DRAWING WITHOUT THE USE OF TEMPLATES: "MY NAME IS HANK" BEING WRITTEN BY THE MACHINE KNOWN AS HANCOLINE, DEVELOPED BY HANCOCK AND CO. This flame cutting machine which uses an electronic scanning device to follow pencilline drawings, is one of the many interesting exhibits in the Engineering, Marine, Welding and Nuclear Energy Exhibition in London. Another is an 11-ton loom for weaving wire, developed by G. A. Harvey Ltd.



AT THE CONSECRATION OF THE DANISH SEAMEN'S CHURCH IN LONDON IN THE PRESENCE OF THE KING AND QUEEN OF DENMARK: PASTOR POUL A. KNUDSEN PREACHING DURING THE SERVICE. The new Danish Seamen's Church at Stepney consecrated on April 19 by the Bishop of Aalborg. The building has cost \$40,000 and is constructed in the shape of an "M." It has a pergola entrance and seats only forty-five people, although sliding doors can extend its size.



IN THE PRESENCE OF THE KING AND QUEEN OF DENMARK (LEFT), AND PRINCE GOVERNMENTS: THE BISHOP OF AALBORG ENTERING THE DANISH SEAMEN'S CHURCH

A WINDOW ON THE WORLD. TWO GIANTS LEAVE AT A CRITICAL TIME.

By CYRIL FALLS.

Sometime Chichele Professor of the History of War, Oxford.

all these qualities. The third is, of course, the British Prime Minister; the potential fourth General de Gaulle, who has not yet acquired all the experience of the others and still has to prove himself, certainly abroad. At a period when a concerted effort is being made to solve the problem of Berlin and to link the solution with efforts to improve the prospects of peace, the departure of Mr. Dulles and Chancellor Adenauer

THE free world has no superfluity of

experienced, determined, and dis-

tinguished by their personalities, in the

field of international affairs. It cannot

easily afford to lose almost sim-

ultaneously two out of the obvious

three and the possible four who possess

statesmen who are at once skilled,

There is, however, a wide difference between the fate and future of the American Secretary of State and the German Chancellor, who have been so closely associated in the past and were expected to remain so in the critical tasks ahead. Mr. Dulles, as had lately been foreseen but definitely confirmed only in the middle of April, has been forced to leave the arena by crippling illness. Dr.

Adenauer, a much older man, is well and at the top of his form. He will, normally, hold his present office for the better part of half a vital year, and may be expected to play a major part before he passes on to the Presidency. That office is by no means without constitutional powers, though the fact has largely escaped outside notice owing to the restraint and aloofness of the present holder.

is a misfortune.

To borrow a phrase made popular by Mr. Dulles, his critics have already begun an "agonising re-appraisal" of his career, qualities, and conduct. This process may have been connected with natural sympathy for the blows which he has borne with so much courage, but there is more in it than that. Opponents and supporters alike-and at one time there were more of the former than of the latter-have

realised that his going leaves a blank. To my mind it does so not solely by reason of the virtues I have enumerated, but because he is a good and high-minded man. At the same time he is scornful of sentimentality and wishful thinking. I believe his character and his policy will command increasing respect as time goes on. Lately, too, he had shown himself more

Dr. Adenauer, for his part, will probably be ranked as the ablest holder of his office since Bismarck. Like the Puritan Secretary of State, the Roman Catholic Chancellor is deeply religious. He is also courageous and loyal. It has been a tremendous feat to make the Federal Republic as a whole accept the temporary division of Germany on the ground that, if it were not sceepted, the country's links with the West, which he cherishes, would have had to be broken. Yet has all the time nourished and supported the lung that this division would be brought to an end. had to use dexterity in driving his pair of which have often tended to pull apart, but

his dexterity has not affected his honesty. He can out-manœuvre opponents without divesting himself of that quality.

I admire the penetrative powers of writers who have been revealing to us the secrets of his inmost mind, but do not myself profess to be a thoughtreader. His essential problem would seem to be as follows. He could probably buy to-morrow from the Soviet Union the reunification for which he hopes, with a parody of independence, or even something a little better, by agreeing to the maintenance of Communism, however artificial, in East Germany on the one hand, and severing political, cultural, and, above all, military relations with the West on the other. This course he will not tolerate, but he suspects the Social Democrats of feeling some attraction for it. If so, there might

questions put by three ex-Ministers on his own side. Mr. Gaitskell's point, which pleased Mr. Butler, was that, while there might be differences of opinion between the two Governments on questions at issue at the moment, there was no evidence of general anti-German sentiment in this country. Mr. Butler's further contribution, that

he "did not think there were any fundamental differences on policy, though there were differences of emphasis," was certainly a defensive stroke, though justified.

There must be something more in it than that. What is it? Again I lay no claim to the perspicacity of many commentators, but I can at least speculate. I should say that the British Government regards reunification, however desirable, as not yet practical politics, whereas Dr. Adenauer regards it as the proper basis of negotiations. I also imagine that he dislikes British proposals for a measure of limitation of armaments. It is certain that he would refuse without reservation any plan the effects of which might be to put Germany in the position which Austria has more or less willingly assumed, that of neutralisation. The

trouble is that this is not only a question of progress towards peace in general. It is linked with the status of Berlin, and that is a problem. which has to be attacked without any avoidable delay.

There can be no doubt that Bonn, Paris, and even Washington were somewhat perturbed by Mr. Macmillan's Russian visit. Their reaction was due not merely to anxiety

lest he should say something better left unsaid -though few statesmen of our time are less given to doing so -but also to sensitivity about their prestige and jealousy that one Prime Minister should seem to be taking the leadership of the West in international affairs. The Prime Minister cannot have had any such intention, but neither can he help being the most clear-President Eisenhower announced the resignation of Mr. John Foster Dulles as Secretary of State at the White House Press Headquarters, sighted of them all. It is the nature of Press and pop-

ulace, not altogether novel but particularly marked to-day, that they have to distort such situations by dolling them up. In this respect the United States is often more at fault than are we ourselves.

In my view, those in this country who favour anything like neutralisation and disarmament of Germany are completely unbalanced. It would increase rather than diminish the risk of war. and of one of the worst kind, because it would weaken the conventional strength of the West, leave the whole of Europe open to any forces which chose to march into it, destroy most of the value of NATO, and elevate the megaton bomb to the first line of defence, whereas it is fortunately still the last. Yet a start on the road to disarmament by phases in the form of limitation under international control and inspection is not an impossibility. Recent tendencies have imperilled it, but the project survives. We can feel confident that Mr. Macmillan will not easily allow it to perish.



PRESIDENT EISENHOWER ANNOUNCES THE RESIGNATION OF MR. JOHN FOSTER DULLES AS SECRETARY OF STATE: THE SCENE AT THE WHITE HOUSE PRESS HEADQUARTERS.

be a danger of their putting it over to West Germany. This would explain his affectionate

relations with General de Gaulle, who is strongly

credited with a similar opinion.

Otherwise he stone-walled stylishly.

Augusta, Georgia, on April 15. In his speech he described Mr. Dulles as "a man of tremendous character and courage, intelligence and wisdom," and made clear his intention "to keep him close, where he can be useful both to the State Department and to me..." In his official letter of resignation, Mr. Dulles stated: "If I can, in more limited capacity, continue to serve, I shall be happy to do so."

> The Chancellor has been accused of excessive obstinacy and obstruction. The speech in which he commented on "unfriendliness" in this country has been held up as an example of it. There has been unfriendliness in some quarters and the speech does not merit the description of "arrogant and dictatorial" applied to it in the House of Commons on April 14. Still, Mr. Butler, answering questions for the Prime Minister, did acknowledge that we had "expressed to the Chancellor our belief that some of the anticipations and doubts he had in mind are exaggerated." This was the one stroke in which Mr. Butler opened his shoulders.

> It was also notable that when the Leader of the Opposition intervened with a supplementary, it was for the purpose of removing the barbs from

A WINDOW ON THE WORLD-I.



U.S.A. A WILDLY ENTHUSIASTIC RECEPTION FOR THE BOLSHOI BALLET IN NEW YORK; MME, ULANOVA

(R., CENTRE) AND OTHER DANCERS ACKNOWLEDGING APPLAUSE.

The Bolshoi Ballet began its American tour with a performance of Prokofiev's "Romeo and Juliet" at the Metropolitan Opera House, New York, on April 16. After the performance (at which the photograph was taken) the audience applauded the dancers with the greatest enthusiasm.



AMSTERDAM, THE NETHERLANDS. LAID RECENTLY AT THE ANNE FRANK HOUSE ON THE OCCA-SION OF THE

AMSTERDAM PREMIERE OF THE FILM ABOUT ANNE FRANK.



THE SCENE WHEN WREATHS WERE

CONNECTICUT, U.S.A. THE U.S. ATOMIC SUBMARINE SKIPJACK AT A BERTH IN NEW LONDON AFTER TRIALS AT SEA AND JUST BEFORE HER COMMISSIONING, ARRANGED FOR APRIL 15. SHE IS CLAIMED AS ONE OF THE WORLD'S FASTEST SUBMARINES.



FRANCE. GENERAL DE GAULLE SPEAKING AT MOULINS DURING HIS TOUR OF CENTRAL FRANCE.

General de Gaulle recently completed a four-day tour of central France, during which hm said, in a speech at Auxerre, that there was undoubtedly some discontent in France and that "certain measures would have to be revised." Warmly greeted in Moulins, his welcome was cooler in some Communist districts.



FRANCE, M. PINAY, THE FRENCH MINISTER OF FINANCE, HOLDING UP THE FIRST NEW FIVE-FRANC PIECE. The first five-franc piece of the new "heavy franc" currency was struck at the Hotel de la Monnaie on April 16. It bears a representation of a sower, will be worth 500 of the present francs and is due to go into circulation at the end of the year. M. Pinay is seen shortly after the striking of the first coin.



U.S.A. OUTSIDE MONTANA STATE PRISON: THE SCENE BEFORE NATIONAL GUARDSMEN STORMED THE PRISON TO BREAK THE REBELLION AND FREE THE HOSTAGES.

On April 18, well-armed National Guardsmen stormed Montana State Prison and ended a rebellion of the convicts, who were holding 21 people as hostages. The hostages were saved, the two riot ringleaders were found dead, and none of the assault party was seriously wounded.



THE DALAI LAMA, ACCOMPANIED BY MR. MERSH LEFT, INDIAN MINISTRY FOR EXTERNAL AFFAIRS, SHORTLY AFTER ARRIVING IN A SULL As reported in the front page, the Tibetan specitual and temporal ruler arrived from India's North East Frontier Agency on April 18. After his arrival he issue as a ment in which he said he had left Tibet of his arm free will and not under

A WINDOW ON THE WORLD-II.



QUEBEC, CANADA. INTO LOCK NO. 1: THE FIRST SHIP TO ENTER THE ST. LAWRENCE SEAWAY, DUE TO BE INFORMALLY OPENED ON APRIL 25. After a year of exceptionally heavy ice, the St. Lawrence Seaway is now ready for traffic, although the planned uniform depth of 27 ft. will not be achieved until about 1961. The official opening will be on June 26, and the ceremonies will be performed by the Queen and President Eisenhower.

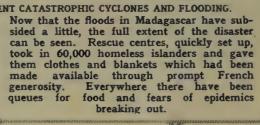


HONG KONG. AN 8350-FT. RUNWAY JUTTING OUT INTO THE SEA: HONG KONG'S RECENTLY COMPLETED INTERNATIONAL AIRPORT WHICH HAS COST ABOUT £8,000,000.

After three years of construction work by British and French firms, the development of Kaitak Airport, Hong Kong, is now virtually completed. The long runway will take almost any type and size of aircraft. A further programme for facilitating 24-hour service is under consideration.



MADAGASCAR. SALVAGING WHAT REMAINS AMONG THE CHAOTIC RUINS OF THEIR PROPERTY: THE PEOPLE OF TANANARIVE RETURNING AFTER THE RECENT CATASTROPHIC CYCLONES AND FLOODING.





MADAGASCAR. HUNGRY AND HOMELESS: SOME OF THE MANY VICTIMS OF THE RECENT FLOODS QUEUEING FOR FOOD AT THE RESCUE CENTRES SET UP BY THE FRENCH ON THE STREET ISLAND.



CALIFORNIA, U.S.A. LAUNCHED BY A BRITISH TEAM FOR THE FIRST TIME: THUR INTERMEDIATE RANGE BALLISTIC MISSILE AT VANDENBERG AIR FORCE BASE.

After days of agonised waiting, caused by bad weather and technical hitches, the first Thor intermediate-range ballistic missile to be soared into the sky at Vandenberg Base, California, on April 16. It was the final stage in the training of the first R.A.F. launching team, and it is understood to have been a complete success.

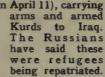
(Right.) CALIFORNIA, U.S.A. TRIUMPHANTLY HOLDING THE KEY WHICH BEGAN THE FIRING OF THE THOR MISSILE: SOUADRON LEADER COULSON. THE LAUNCH CONTROL OFFICER.



A WINDOW ON THE WORLD-III.

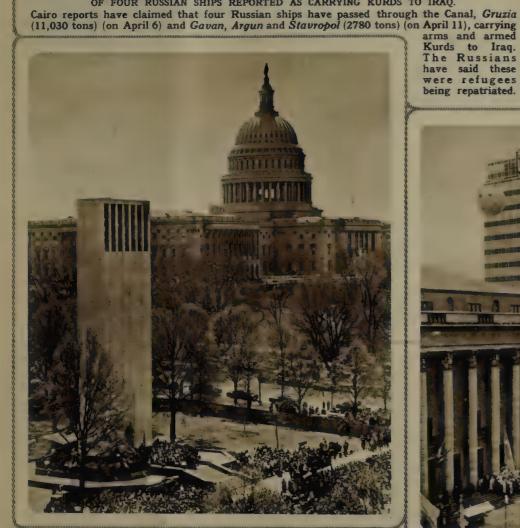


THE SUEZ CANAL, EGYPT. THE SOVIET SHIP ARGUN (5690 TONS) AT PORT SAID, ONE OF FOUR RUSSIAN SHIPS REPORTED AS CARRYING KURDS TO IRAQ.





LAKE MAGGIORE, ITALY. THE SCENE AT THE OPENING OF THE ISPRA CENTRE FOR NUCLEAR STUDIES. (BACKGROUND) ITALY'S FIRST NUCLEAR RESEARCH REACTOR. On April 14, before President Gronchi and a distinguished gathering, the Ispra centre of nuclear research was opened on the southern reach of Lake Maggiore. Ispra I, the gas-tight metal cylinder (background), is an improved version of the Argonne reactor at Chicago.



WASHINGTON, D.C., U.S.A. IN THE SHADOW OF THE CAPITOL: THE TAFT MEMORIAL BELL-TOWER (LEFT) DURING DEDICATION. On April 14 President Eisenhower dedicated on Capitol Hill, Washington, m 100-ft. bell-tower which has been built as a memorial to the late Senator Robert Taft of Ohio. The Memorial was accepted on behalf of Congress by Vice-President Nixon and the Speaker.



STOCKHOLM, SWEDEN. THE SCENE OUTSIDE THE CONCERT HALL AS KING GUSTAV ADOLF OPENED THE FIRST PHASE OF THE "STOCKHOLM MANHATTAN."

This redeveloped part of Stockholm, the first phase of which is now complete, is being known popularly as the Stockholm Manhattan owing to the presence of "skyscraper" flats, of which the first of four blocks is now complete. Other features are a concert hall (left), a the theatre (background), and (centre) an underground food-hall.



LUBANG, PHILIPPINE IS. BREAKING THE NEWS THAT THE WAR IS OVER, A JAPANESE USING A LOUD-HAILER TO REASSURE TWO HIDDEN JAPANESE VETERANS. It has been reported that a Japanese officer and sergeant are still hiding in the Philippine jungles, unaware that the war came to an end in 1945; and that they have been raiding villages in Lubang and terrorising villagers. Our photograph shows one method used by search-parties.



PARIS, FRANCE. M. JACQUES SOUSTELLE AND M. ANDRE MALRAUX ADMINISTRA ONE OF THE SCULPTURES IN AN EXHIBITION "TREASURES OF PRE-COLUMBIAN AND OF AMERICA, WHICH OPENED AT THE GALERIE CHARPENTIER ON APRIL 13

A WINDOW ON THE WORLD-IV.





BREMERHAVEN, WEST GERMANY. A NEW COMPLETELY ENCLOSED LIFEBOAT,
MADE OF PLASTIC MATERIALS, WHICH SEATS SOME FORTY PEOPLE.

This new diesel-powered lifeboat is fully enclosed to give maximum protection to the occupants, the two transparent domes making possible constant observation. The vessel is said to be able to right itself automatically flored any position



SWEDEN. A DIAMOND, SAID TO WEIGH 102.55 CARATS (ONLY SLIGHTLY LESS THAN THE KOH-I-NOOR) AND TO HAVE BEEN PART OF THE RUSSIAN CROWN JEWELS, WHICH (IT WAS REPORTED) WAS TO BE AUCTIONED IN STOCKHOLM ON APRIL 17 ON BEHALF OF AN ANONYMOUS OWNER. IT WAS VALUED AT £12.000.

(Above.)

MERS-EL-KEBIR,
ALGERIA. UNLOADING ARMS AND AMMUNITION FROM THE
SEIZED CZECHOSLOVAKIAN SHIP
LIDICE.

A French naval patrol recently intercepted the Czechoslovakian cargo ship Lidice in the Mediterranean, ordering it into Mersel-Kebir. 580 tons of arms unloaded from the ship were claimed by the French to be destined for Algerian rebels. There were Czech and Moroccan protests at the French action.

(Right.)
SWITZERLAND.
TO BE AUCTIONED IN
BERNE BETWEEN
MAY 8 AND 14 AND
ON SHOW AT THE
JURG STUKER GALLERY, BERNE, UNTIL
MAY 2: SOME PIECES
OF THE SILVERGILT SET OF THE
EMPRESS JOSEPHINE.





WEST GERMANY. BRONZE BELLS RECENTLY INSTALLED ON THE MODERN TOWN HALL OF WOLFSBURG. IT IS CLAIMED THAT THE CHIMES OF THE BELLS ARE OUTSTANDINGLY BEAUTIFUL AND THAT A WIDE RANGE OF MELODIES CAN BE PLAYED ON THEM.



FRANCE. THE FIRST BRIDGE TO SPAN THE SEINE BELOW ROUEN: PROGRESS ON THE NEW SUSPENSION BRIDGE (TO BE EUROPE'S LARGEST) AT TANCARVILLE, NEAR LE HAVRE.

Work progress on the suspension bridge at Tancarville, the erection of which was begun in 1955. When completed, the bridge will give greatly improved access to Le Havre from the south.

It is reported that it is due to be opened to traffic on July 14.



MILAN, ITALY. PRESIDENT GRONCHI LISTENS TO A RECORDED TELEPHONE MESSAGE ON VISITING THE BRITISH STAND AT THE INTERNATIONAL SAMPLES FAIR.

President Gronchi of Italy opened the thirty-seventh International Samples Fair in Milan on April 12, afterwards visiting the British stand. British exhibits showed the latest British achievements in nuclear energy production, TV, turbojet engines and other spheres.

NOTABLE AIRCRAFT, NOTABLE FLIGHTS, AND "THE TIGER MOTH."



THE ORIGINAL MOSQUITO, W4050, RETURNING TO ITS BIRTHPLACE NEAR LONDON COLNEY, HERTS., WHERE IT WILL BE PERMANENTLY EXHIBITED FROM MAY 15. On April 8 the original Mosquito, W4050, the first of some 8000 of these aircraft which played an outstandingly important rôle during the war, was returned to the hangar in the grounds of Salisbury Hall, near London Colney, where it was built in great secrecy in 1940.

It will be on permanent exhibition from May 15.



BEING PUSHED ALONG THE ROAD BESIDE ROCHESTER AIRFIELD, KENT: A TIGER MOTH AIRCRAFT FROM WHICH THE SIGN OF A NEW INN WAS LATER UNVEILED.



PRESENTED TO THE SCIENCE MUSEUM, LONDON: THE NOSE SECTION OF THE FIRST AIRCRAFT TO BE FLOWN ACROSS THE ATLANTIC TWICE IN ONE DAY. The nose section of the English Electric Canberra which, in 1952, became the first aircraft to be flown across the Atlantic twice in one day, has been presented to the Science Museum by the makers. It is to be exhibited alongside the Vimy aircraft in which the first non-stop flight across the Atlantic was made.



EXHIBITED FOR THE FIRST TIME: THE DASSAULT MIRAGE IV-01, SEEN HERE AT

MELUN-VILLAROCHE AIRFIELD, FRANCE.

The new Mirage IV-O1, built by the French Dassault aircraft company, was exhibited for the first time recently. Few details of this model are available. The delta-winged Mirage III was designed for high-altitude interception, and for tactical support from small airstrips, the III-A version having a S.N.E.C.M.A. Atar 9 turbojet and auxiliary rocket motor.



A TIGER MOTH FLYING OVER "THE TIGER MOTH," THE NEW INN NEAR ROCHESTER AIRFIELD WHICH WAS OPENED RECENTLY.

"The Tiger Moth" is a new public house close to Rochester airfield. At the opening ceremony on April 14 its inn sign was unveiled by Colonel R. L. Preston, Secretary of the Royal Aero Club, as he sat in the cockpit of a Tiger Moth. The aircraft had previously been landed on the road near the airfield and then pushed into position at the inn.



A NON-STOP FLIGHT FROM MARHAM, NORFOLK, TO SALISBURY, S. RHODESIA, IN 10 HOURS 12 MINUTES THE R.A.F. CREW AND THEIR VALIANT BEFORE THE FLIGHT.

A non-stop flight from Marham to Salisbury, Southern Rhodesia, was made by a Valigat bomber on April 16. The training flight was made at an average speed of 521.4 m.p.h., refuelling taking place 7 miles above the Sahara at a temperature of minus 50 degrees Centigrade.

THE UNIVERSE AT THE BEGINNING OF THE "SPACE AGE." X. THE STARS

By R. A. LYTTLETON, F.R.S., Fellow of St. John's College, Cambridge.

A LL the stars of the galaxy are bound together gravitationally to form the entire galactic system, but individual stars that are adjacent at any one time do not as a rule remain close together, for they have independent slightly different motions round the galaxy. On the other hand, there are many pairs of stars that are permanently bound together, and locked in each other's gravitational field are pursuing orbits round each other like partners in a dance. Such systems are called binary stars, or double stars, and they are of special importance in astronomy, for it is only from them that the masses of stars can be accurately found. It is not possible to measure the mass of an isolated body in space. Only when some other body moves near it in a motion dominated by the central body can the mass of the latter be determined.

Over 20,000 such double stars are known, and these fall into different classes. First are those of such wide separation that the telescope shows the system as two distinct stars in slow orbital motion round each other, though it may take measures over many decades to determine the relative paths. If the path of either component referred to some independent standard, such as the background of fixed stars, is found, then the masses of the component stars can be found if the distance of the system is known. It is not even necessary that both components shall be visible for this method to work; indeed, it was by this means that Bessel discovered that the brightest star Sirius had a faint invisible companion, Sirius B, which has since become possibly more celebrated than Sirius A itself, because it is one of the bestdetermined white dwarfs. It is a star little larger than the Earth but nearly as massive as the sun, and therefore having a mean density more than 50,000 times that of water. A matchboxful of its material would weigh over a ton!

But there are many double stars whose components are so close that no telescope yet made can separate them and show them as individual stars. These are called spectroscopic binaries. There is no doubt of the presence of two stars because the spectroscope shows that two different lots of light are sent out from stars having different motions. And these motions are fully in accordance with orbital motion of the stars round each other.

The bright star Capella stands at the limit of both types, for it is both a visual binary and a spectroscopic binary. Its two members revolve round each other in 104 days. But most visual binaries have periods much longer than this, measured in years or even centuries. For Sirius, for example, the orbital period is fifty years. There must be many visual binaries with periods of thousands of years for which the orbital motion in a few years is too small to be detected. But most spectroscopic binaries have periods measured only in days, which implies that their components are usually only a few of their own radii apart. Indeed, there are instances, such as the famous star Beta Lyræ, where the two stars are practically in contact.

It happens just as a result of chance that for a small percentage of these spectroscopic systems the plane in which they revolve round each other passes through or, at any rate, so near the Earth that the two components eclipse each other as each appears to pass across the face of the other as seen from the Earth. During the eclipse, the nearer star cuts off some of the light of the further one, and the total light of the system is observed to diminish. This happens twice per revolution, of course, but the drop in luminosity is seldom the same at both eclipses because the two stars are seldom exactly similar in size and brightness. Much information can be extracted from analysis of the light curves of such systems. Some 200 eclipsing binaries are known. The light curve may show secondary effects arising even from tidal distortion of the stars produced by each other's gravitational fields, and also reflection effects from the facing hemispheres of the components. These produce slight variations in the total light outside the intervals of actual eclipse.

The range of masses found for stars is by no means great. A factor, of 100, giving a range from about half the mass of the sun up to fifty solar masses, would include almost all stars observed. But small stars are necessarily faint—the brightness of a star depends roughly on the cube of its mass—and so the probability of their discovery, onless they happen to lie close to us in the galaxy, sinuch smaller than for massive stars. So there are the well be large numbers of faint stars of very mass unobservable individually.

Double stars may themselves have companions, and so on, so that higher degrees of multiplicity are found, in decreasing number as the multiplicity advances. Many triple systems are known taking the form of a close binary with a third much more distant companion. Quadruple, quintuple, sextuple systems and higher are known, proceeding on with greater complexity to clusters containing very many stars, and ending really only in the whole galactic distribution itself (which, by the way, is a member of a cluster of galaxies, some twenty in all of various sizes, bound together gravitationally).

Another class of stars altogether is of special importance when it comes to determining distance. Ordinary surveying methods, using the diameter of the Earth's orbit round the sun as base-line only, enable the distances of the nearest stars to be measured; for most stars it is quite inadequate because of their immense distances. The stars that help to get past this difficulty are the famous Cepheid variables, so called after their prototype Delta Cephei which exhibits the characteristic variation in its total light. Cepheids, for the most part, are among the very brightest stars, thousands of times as bright as the sun, and so



PART OF THE SOUTHERN MILKY WAY NEAR CENTAURUS, SHOWING THE SO-CALLED "COALSACK," ONE OF THE INNUMERABLE DARK DUST CLOUDS THAT OBSCURE THE BACKGROUND STARS, AND ALSO THE STARS OF THE SOUTHERN CROSS (TO THE RIGHT AND SLIGHTLY ABOVE THE "COALSACK" IN THE PICTURE).

can be seen (telescopically) as individual stars at very great distances, so long as there is no great quantity of interstellar dust intervening, and they are also to be found in globular clusters and in external systems. The reason they are of importance for determining distances is that the period of their light variation is directly related to their intrinsic brightnesses. The total light emitted by a Cepheid varies in an unmistakable way with a regular unchanging periodicity. The star brightens up rapidly in a day or so by a factor of four or five, and then much more gradually grows fainter again, taking several days to drop down to its faintest. The cycle is repeated with absolute regularity, so that a Cepheid can readily be recognised from a record of this changing brightness.

It is an extremely difficult question what causes this variation of light, but quite regardless of this it has been found from observation that Cepheids of the same (average) intrinsic brightness have almost exactly the same periods of light variation. This empirical rule was first found from a study of the many Cepheids of the Magellanic Clouds. All the stars in them can be regarded as at practically the same distance, and so the relative apparent brightnesses of the stars in one of the clouds must be the same as their relative absolute brightnesses. When the period and brightness of a number of Cepheids are plotted against each other it is found that a smooth curve runs pretty well through all the points. To fix the precise position of the curve, it is then only necessary to find the actual distances of a few of

the nearest Cepheids within the galaxy, and their periods, and relate them to the curve. Having once obtained such a curve, the absolute intrinsic brightness of any Cepheid of measured period can be read off, and this value when compared with the apparent brightness will determine the distance of the star.

Yet another exceptional class of stars are the so-called red giants. Normal stars have both their size and brightness related to their mass in a more or less standard way, so that almost all stars of the same total mass are of the same size and brightness. There are laws connecting them, and although the composition affects things too, it does not do so to any great extent so long as the star is of much the same composition throughout. But the red giants although having total luminosities in accordance with their masses—some of them are binaries, so that the masses can be foundnevertheless have radii far in excess of what these masses would imply usually. This results in the star having far greater surface area than normal from which to radiate its total light, and it adapts itself to this by being far cooler at the surface, and therefore much redder in appearance, than a normal star of the same mass. Hence the name of

The classic example of such stars is the great red star Betelgeuse, in the constellation of Orion. This is easily visible to the naked eye as a brilliant first-magnitude star. Its surface is at a mere 2500° C., about one-sixth or less of the temperature stars of similar mass normally have. Its actual radius is about 250 times that of the sun, which means that the whole of the Earth's orbit would easily fit inside it. No doubt for reasons related to the large radius, this star is slightly variable in size and brightness, but not in a strictly periodic way like a Cepheid. The average period is about six years, but the oscillations are irregular and show no tendency to recover from any departure from strict periodicity. Other examples of red giants are also well established, the record in size so far being held by a component of the double star VV Cephei, which has been found to have a radius 3000 times that of the sun—about half that of the whole solar system itself.

The reason for these unusual distensions is almost certainly a systematic difference of composition between the massive interior and the far less massive atmosphere. If the latter is mainly hydrogen while the interior is of higher molecular weight by a factor of two or so, the simple consequence is this increase in radius, the constituent particles of the atmosphere attaining greater speeds because they are light and so can rise higher. The matter can be worked out theoretically, and shows exactly how the distension arises while scarcely affecting the deep interior of the star at all. This is why the total luminosity remains normal.

All the stars mentioned so far, even those whose light varies, are well behaved and produce their energy output in a regular controlled manner. But there are stars that suddenly blaze out explosively, increasing their brightness temporarily by phenomenal amounts. These objects used to be called "temporary" stars, but the term nova is now more common. If this happens to a star lying fairly near us in the galaxy, a brilliant star may suddenly appear where none was to be seen before except with a powerful telescope. Records exist of such incidents, before the invention of the telescope. A "new" star was seen as bright as Venus in the year 1572, for instance. But most of these ordinary novæ are faint even at their brightest because of their immense distances. It is estimated that about twenty per year reach a brightness greater than the ninth magnitude (the fifth or sixth would be needed for them to be seen with the unaided eye), so that most of them can only be detected telescopically, as indeed a number have been quite by chance.

At much rarer intervals, perhaps once every 250 years on average in the galaxy, an exploding star of far greater violence still is to be seen. Such a star may suddenly increase in brightness by a factor of many millions, and then gradually decline back to its former insignificance taking a year or more to do so. Unfortunately no such supernova explosion has been observed in our own galaxy since the invention of the telescope, but there are records of one having been seen visually in the year A.D. 1054. In the recorded position of this outburst, there is now to be seen the gigantic luminous gas-cloud known to astronomers as the Crab Nebula, which evidently represents the present extent of the expansion 900 years after the explosion. The amount of matter thrown off may be several times the mass of the sun, and the merest fraction of I per cent. of it would have enough mass to equal all that of the planets. It is the capture of the merest wisp of such an explosion by the sun that we are nowadays driven to regard as the initial source of the planetary material. [Continued opposite.



BINARY STARS, NOVÆ AND SUPERNOVÆ, RED GIANTS, WHITE DWARFS: DIFFERENT TYPES OF STAR.

Examples of supernovæ have, however, been found in recent years in other galaxies external to ours, so bright do these stars become for a time. It has happened that a single star has become brighter than all the other stars in its galaxy together, which would mean thousands of millions of times the sun's brightness. In these explosions the temperature within the star has first risen to thousands of millions of degrees, and is sufficiently high for the generation of all elements to take place. The material scattered into space can thus consist of heavy elements, and it is believed that the vast tracts of dust in interstellar space have formed from just such processes of ejection. The galaxy must be about 10,000 million years old, so there has been plenty of time for large numbers of such explosions to have happened to produce the vast quantities of dust observed. Right at the other end of the size-scale come the white dwarfs. These curious objects seem to represent the final stage that a star left to itself reaches after it has burnt up all its available hydrogen and cannot raise its internal temperature sufficiently

to generate any further energy. Such a star shrinks down and down in size until its material takes on what is termed degenerate form, different from the ordinary gaseous form. In this state, the density can take on enormous values (thousands of times that of water), and the light output becomes very low. A typical observable white dwarf is no larger than a fair-sized planet, but although giving out little light, the small surface area still requires it to be hotter on the surface than the sun—hence the name white dwarf. Such stars are not readily discovered because of their extreme faintness, and only those in the sun's immediate neighbourhood in the galaxy would stand any chance at all. The fact that one 200 have been found therefore, suggests that such stars may be very common in space. The escape of a star from such a state would only occur if it could replenish its hydrogen somehow, and the only way this appears possible is if it happened to enter an interstellar hydrogen cloud. If then it were able to gather in sufficient hydrogen, it could, in fact, swell and become a normal star again.



A FRUSTRATED PRINCESS.

"DAUGHTER OF FRANCE." By V. SACKVILLE-WEST.*

An Appreciation by SIR CHARLES PETRIE.

IF there are any lingering doubts in any quarter whether the authoritarian rule of Louis XIV was essential for the salvation of France they will surely be set at rest by the perusal of this book. Miss Sackville-West's heroine is Anne, Duchess of Montpensier, commonly known to history as La Grande Mademoiselle, daughter of that Gaston, Duke of Orleans, who was the brother of Louis XIII. In effect, this story, brilliantly and attractively written, is the record of as self-seeking and unscrupulous a group of politicians as ever took advantage of a country's misfortunes to

feather their own nests, and in French history, at any rate, one would have to turn to the worst days of the Third Republic to find their like. Had it not been for the two Cardinals, Richelieuand Mazarin, and for Louis XIV, France, with such a governing class, must inevitably have been dismembered during the course of the 17th century.

Richelieu wrote in his "Political Testament" that when he took office "the Huguenots divided the State with the monarchy, the nobles behaved as if they were not subjects, and the chief governors of provinces as if they had been

independent sovereigns." That it proved impossible to entrust the nobility with political power at this time was in the end to prove a misfortune for France, for successive Kings learnt the lesson only too well, with the result that the aristocracy became courtiers instead of the natural leaders of the people. In no small measure this was due to the absence of local self-government, the growth of which had been checked by the Hundred Years' War and the Wars of Religion; so in 1637, when La Grande Mademoiselle was ten years old, Richelieu persuaded the King to issue an edict appointing Intendants, the predecessors of the préfets of to-day, in each province, and in their hands was placed the whole financial, judicial, and police administration with the wide powers which had formerly been enjoyed by the aristocracy, but with which it had shown itself too factious and too devoid of public spirit any longer to be entrusted. If France was not to dissolve, like contemporary Germany, into a chaos of semi-independent principalities, the step was inevitable. A couple of decades, however, were to elapse before the nobles reconciled themselves to what had happened, and during this disturbed period Miss Sackville-West's heroine passed her most impressionable years.

Of Anne's character and appearance she writes:

We must—and why shouldn't we?—admit that she was very ugly, uncouth, hoydenish, and devoid of charm for men. We know that her normally fair complexion could become blotched with red when she lost her temper. She strode where she should have tripped, swore where she should have coaxed, was haughty where she should have been dissembling, rough where she should have been gentle. . . Rough and forthright, honest and spacious, her nature in many ways matched her physique. She must have appeared very large and hoydenish in a Court peopled by soft, perfidious, intriguing, and amorous women.

* "Daughter of France: the Life of Anne Marie Louise d'Orléans, Duchesse de Montpensier, 1627-1693." By V. Sackville-West. Illustrated. (Michael Joseph; £1 58.)

She came from a bad stable, for her father was a despicable creature who tried to run with the hare and hunt with the hounds, with the result that he earned the contempt of both sides. He was implicated in all the plots against Richelieu, and when these were discovered he was always ready to purchase his own safety by betraying his own associates. At some function he extended his hand to the Prince de Guémenée, who had ascended a platform, and wished to come down; whereupon the Prince observed, "I thank Your Royal Highness the more sincerely for your help,

as I am the first of your friends whom you ever assisted to descend from a scaffold." He died at Blois in 1660, regretted by no single person: even his widow, Anne's stepmother, stripped the sheets from his bed the moment the breath was out of his body, and she flagrantly ignored the conventions in the matter of mourning. Scarcely prayer was said for the son, brother and uncle of three powerful monarchs; the priests left his body unattended at night, and when it was finally removed to St. Denis only a few pages and almoners were present. As for Anne, she had been left motherless when she all, she was only twenty-five, and her vanity was immensely flattered. There was henceforth no limit to her ambition, and she even formed the project of marrying her cousin, Louis XIV, though he was eleven years her junior. In short, her triumph at Orleans went to her head—with the most fatal consequences for herself and her ambitious scheme.

A few months later the tide began to turn against the Frondeurs, and Mazarin decided that the time had come to strike a final blow at them: at the beginning of July 1652, their army, under Condé, was defeated under the walls of Paris in the Faubourg Saint Antoine, and the King sent a personal order to the effect that the gates of the city were not to be opened to the beaten army. On the authority of her father, Anne not only gave instructions for the gates to be opened, but she betook herself to one of the towers of the Bastille, and at her command the cannons of the fortress opened fire on the Royal army to cover the retreat of Condé. To use the words of Mazarin, she "killed her Royal husband with the ordnance of the Bastille," for Louis saw with his own eyes what she had done, and he never wholly forgave the insult. It was the most dramatic moment of her life, and the most fatal.

After that all was anti-climax. Anne's old political associates were reduced to impotence when the King assumed full power on the death of Mazarin, and the day of aristocratic intrigue and civil war was over. France had a master who knew how to make himself obeyed. So the rest of Anne's life was singularly futile; she wished to marry men who would not have her as a wife,

and she refused others, including Charles II of England before the Restoration, who were willing to do so. When she was forty she corresponded with Mme. de Motteville with a view to establishing a woman's society where neither marriage nor love should have a place— an unhealthy sign in one of her age, but shortly afterwards she desperately desired to marry Lauzun, reputed to be the ugliest man in France. For a moment the King wavered, but a storm of disapproval whistled round his ears, and he refused his consent, so that the only notable effect of his cousin's passion was to inspire one of the best-known of Mme. de Sevigné's

letters.



"LA GRANDE MADEMOISELLE" BY PIERRE BOURGUIGNON, SHOWN HOLDING A PORTRAIT OF HER FATHER, GASTON D'ORLEANS: THE FRONTISPIECE OF THE BOOK "DAUGHTER OF FRANCE" REVIEWED ON THIS PAGE.

many years her father was to her a hero as well as a parent, but she saw through him in the end.

FROM THE BOOK BY MISS V. SACKVILLE-WEST REVIEWED

BY SIR CHARLES PETRIE: A STUDY OF "LA GRANDE

MADEMOISELLE," BY JEAN NOCRET.

The pictures from the book are reproduced by courtesy of the publishers,

Messrs. Michael Joseph.

Like many another girl who has not found herself attractive to the opposite sex, Anne plunged into politics, and she played a prominent part in the Fronde. Actually there were two Frondes, in the first of which the role of protagonist was taken by the Parlement, whose members, althoughlargely actuated by selfish motives, did contain among their number honest and patriotic men, desirous of reform-

ing abuses. The second Fronde, in which Anne was implicated, was dominated by ambitious nobles, whose only object was to get rid of Mazarin, and in the process few of the leaders scrupled to obtain Spanish help against their own sovereign and his minister.

Anne was not content to be a spectator of these events, or merely to inspire others from behind the scenes; she would be another Joan of Arc or nothing. "Dear Mademoiselle," the author remarks, "she took herself so seriously; she saw herself so heroically." With an escort of horse she proceeded to Orleans, and she persuaded that city, whose inhabitants had no other wish than to remain neutral, to open its gates to her. After

La Grande Mademoiselle died at the age of sixty-five, having failed in everything she had undertaken, yet Miss Sackville-West has written her biography in such a way that he will indeed be a hard-hearted reader who will not be sorry for the poor frustrated princess when he lays this volume down for the last time. Anne meant so well, but she had been so abominably educated, and one gets the impression that she did not really know "what it was all about"; she was a small fish in the big pond of contemporary French politics, and she would not admit the fact, though one feels that at times she must have realised it. She was out of place, but I find it impossible to resist the conclusion that, given her nature, she would have been so in any age.



A BASTION OF THE IRISH LAW: KING'S INNS, DUBLIN, SHOWING THE REAR ENTRANCE LEADING TO HENRIETTA STREET.

One of Dublin's most famous and striking buildings, constructed during one of the great moments in its architectural history, is King's Inns. Built towards the end of the 18th century, and early in the 19th, it is regarded by many as one of the finest examples of neo-classical architecture in Dublin. Although it is one of the pillars of the Irish legal system, two non-Irishmen were, in fact, largely responsible for its existence. Its name dates back to

**Drawn for "The Illustrated London News" by our Special Artist, Dennis Flanders.

the assumption by Henry VIII of the title King of Ireland instead of Lord, in 1541. In the following year the society of lawyers, by now known as the Society of King's Inn, was granted land on which to erect a new building. It was not until the 18th century that the Society moved to the site on which the present building was constructed, chiefly by the celebrated English architect, James Gandon, and his pupil, H. A. Baker.

ONE OF THE FINEST NEO-CLASSICAL BUILDINGS IN DUBLIN: KING'S INNS,





SEPARATED FROM THE MAIN PART OF KING'S INNS AND SET IN NEARBY HENRIETTA STREET: THE LIBRARY, OF NEARLY 100,000 BOOKS, LONG FAMOUS FOR ITS TWO SECOND FOLIOS OF SHAKESPEARE.

AND TWO WINGS, AND WAS ERECTED LATE II

James Gandon prepared the first and main plans for the present King's Inns, and work began on its construction during the last decade of the 18th century. James Gandou was, perhaps, the leading architect of modern Dublin, and King's Inns of his most successful achievements. He was not an Irishman but

Londoner by birth, and was persuaded to go to Dublin in 1781 to supervise the construction of the new docks, stores and Custom House. He spent the rest of his life there and although frequently confronted with harsh criticism for the pretentiousness and costliness of his schemes, he left behind him a legacy of some

Drawn for "The Illustrated London Ne

TH ITS IMPRESSIVE ARCHES, ITS COURTYARD AND ITS SEPARATE LIBRARY.



8TH CENTURY AND EARLY IN THE 19TH.

TO KING'S INNS, WHOSE NAME DATES FROM HENRY VIII'S REIGN.

of the finest buildings in the city. Apart from King's Inns, probably his most notable contributions to the architecture of his adopted capital are: the splendid and justly praised Custom House, constructed between 1781 and 1791; the East Portico of Parliament House (1785); and the Four Courts (1786-1802). King's our Special Artist, Dennis Flanders.

Inns was his last work, and although building began as early as 1795, the main part of it was not undertaken until 1802. From then onwards work prospective steadily until its completion in 1817, under the supervision of his pupil. H. A.

WITH ITS MAGNIFICENT DINING-HALL: KING'S INNS, SET IN SPACIOUS GROUNDS.

KING'S INNS, Dublin, does not conform in every detail to the design of its prime architect, James Gandon. The view of the front of the building shows the somewhat incongruous cupola added later by Francis Johnston, who for some time occupied himself in embellishing the building's simple lines with rather unnecessary decorations of that kind. Nevertheless, the noble structure remains substantially as it was first intended to be. Recently completed restorations have ensured its continued pre-servation. King's Inns is set in one of the finest gardens in Dublin, and these were made open to the public at the special request of Queen Victoria when she visited Dublin. It is, in fact, from the grounds that one can best appreciate the stateliness of the building, which is approached by a curving drive leading to the main entrance. On either side are pediments supported by caryatids. Invisible from here is the Library of King's Inns, long famous for its unique collection of Irish county histories and two second folios of Shakespeare.

(Right.) WITH PORTRAITS, PILLARS AND CHANDELIERS: PERHAPS THE FINEST DINING-HALL IN THE POSSESSION OF ANY INN OF COURT: PART OF JAMES GANDON'S NOBLE BUILDING IN DUBLIN.





LOOKING OUT ON TO THE BEAUTIFUL GARDENS OPENED TO THE PUBLIC AT THE REQUEST OF QUEEN VICTORIA: THE NEO-CLASSICAL FRONT, SHOWING THE CUPOLA ADDED LATER AS A DECORATION.

Drawn for "The Illustrated London News" by our Special Artist, Dennis Flanders.

THE WINCHESTER CATHEDRAL FINE ART SALE; AND OTHER HOME NEWS.



IN READINESS FOR THE FINE ART SALE IN AID OF THE WINCHESTER CATHEDRAL FUND: THE ORGANISERS (CENTRE) EXAMINING THE MANY GIFTS.

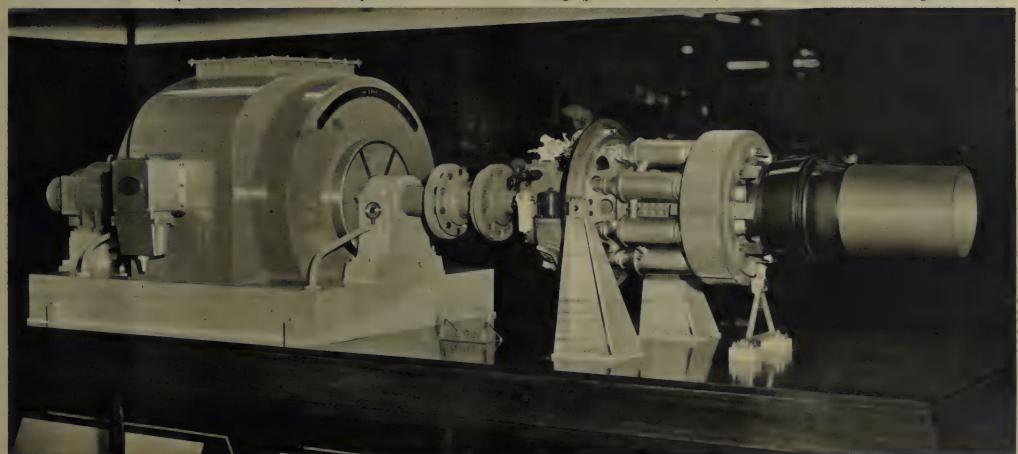
The Fine Art Sale in aid of the Winchester Cathedral Preservation Fund, to which the Royal family and many distinguished friends of Winchester have generously given works of art, was due to take place in Winchester Guildhall on April 21-22.



THE ANAEROBIC BACTERIA BUILDING, ONE OF FOUR NEW BUILDINGS OF THE WELLCOME RESEARCH

LABORATORIES AT BECKENHAM—TO BE OPENED MAY 1.

On May 1 Sir Henry Dale, O.M., F.R.S., is to open four new buildings, the first two phases of the Wellcome Foundation's £2,000,000 development plan. These are a Polio building, two Virus buildings (production and research) and the Anaerobic Bacteria building shown above.



ON SHOW AT THE ENGINEERING EXHIBITION AT OLYMPIA: A QUARTER-SCALE WORKING MODEL OF THE NEW BRISTOL SIDDELEY 3-MEGAWATT TURBO GENERATOR.

Among the exhibits at the Engineering, Marine, Welding and Nuclear Energy Exhibition, which opened at Olympia on April 16, is this turbo generator developed from the Bristol Siddeley *Proteus* aero-engine used in the *Britannia* turbo-prop airliner. The exhibition will close on April 30.



TO BE DEMOLISHED: "THE OAKS," THE HOUSE WHERE THE CLASSIC RACE FOR FILLIES WAS FOUNDED AND AFTER WHICH IT WAS NAMED. IT IS NOW DERELICT.

Both the Oaks and the Derby were founded by gentlemen meeting and drinking at Lord Derby's table at Lambert's Oaks, and the one race was named after the host and the other after his house.

The house, now unsafe, is to be demolished by the present owners, Carshalton U.D.C.



AFTER BEING HAULED UP THROUGH A SPECIALLY-MADE HOLE IN THE FLOOR: A HUGE PAINTING BY RUBENS NOW IN SOTHEBY'S AUCT. IN RUCKS. Rubens' giant painting, "The Adoration of the Magi," due to be add at Sotheby's on June 24, was found to be too large to be brought up their first-floor gallery. The only solution was to cut a hole in the door The painting is part of the valuable Grosvenor collection

A PAGE FOR COLLECTORS.

By FRANK DAVIS.



As time goes on and the Chinese Government—we must give it full marks for archæological enthusiasm—continues its scientific exploration of China's past, we shall no doubt gradually learn a great deal more about the country's prehistory. After all, the Crete of King Minos, right on our doorstep, remained wholly unknown to the Western world for at least 3000 years, and it is by no means beyond the bounds of possibility that some centre of China's ancient civilisation, perhaps long since engulfed by the mud and débris of a flood disaster, may yet be revealed to an astonished world.



FIG. 1. AN EARLY CHINESE BRONZE SACRIFICIAL COOKING VESSEL, DECORATED WITH STYLISED DRAGONS ON A "CLOUD AND THUNDER" PATTERN GROUND: 900 B.C. (6 ins. high.)

Meanwhile, we make do with the limited results of not much more than half-acentury of sporadic and—until recently—uncontrolled excavation.

It really does seem extraordinary that of the photographs on this page, the first two would have been unrecognised as Chinese two generations ago by all but a handful of specialists, and would have been regarded as clumsy primitive artifacts by many who then rather prided themselves upon their scholarship. Even now you can find people for whom Chinese art begins and ends with the porcelains of the seventeenth and eighteenth centuries as it did with our ancestors of 200 years ago; but such endearing specialists tend to disappear with the passage of time and their places are taken by young people who have been brought up to realise the extraordinary range and diversity of Chinese art and the tenacity of its roots.

I suppose that within the foreseeable future we can expect no discoveries of any real importance to come out of China—I mean, in the physical sense—any more than we can expect Egypt to export her

past, or Greece hers, even though fine things can make good ambassadors; but that is a great deal to ask in a wildly nationalistic world. What is surprising, and especially with the early bronzes which so frequently used to appear on this page during the 'thirties, is that occasionally they are still to be seen on the market. These vessels even now halt me in my tracks, though it is difficult enough to explain why in so many words. They are of no great size; this one (Fig. 1) is 10 ins. across, yet there is a majesty. about it which comes partly from its extremely well-balanced proportions, partly from the fierce vigour of the decoration—highly stylised dragons a ground of spirals known as "cloud and 'hunder' pattern, with two flanges (one of them facing in the photograph) set amid monster masks. wessel used for ritual sacrifice and no doubt harded down in the family from generation to

THREE THOUSAND YEARS OR SO.

This is no place in which to discuss theories of dating these early bronzes; enough to note here that this piece belongs to the considerable number classified as from an early stage, not later than 900 B.C., or about the time of the Siege of Troy. Perhaps the following will be of more general interest than interminable arguments about plus or minus a century or so. First, all these early bronzes display a very high degree of skill; they are brutal and violent if you like, but by no means technically primitive; in other words, those we know are the results and not the pioneers of a long tradition. It follows, therefore, that however cautious we may be in accepting Chinese legends, there may be a solid basis of fact in the old stories about the origin of bronzes. (It is not so long ago that the Greek stories about Minos and

the Labyrinth were regarded as having no validity whatever; Sir Arthur Evans showed us we were wrong, and Miss Mary Renaud in our own day in "The King Must Die" has reinterpreted them for us with rare imaginative insight.)

The Chinese tradition is that the Emperor Yü the Great, who founded the first Chinese dynasty, the Hsia, in 2205 B.C., called in the tribute metal from his nine provinces and made from it nine great cauldrons (ting). These nine cauldrons seem to have been regarded as imperial insignia—rather like the crowns and sceptres of the Western world. During the chaos which followed the fall of the Chou Dynasty they are said to have been thrown into the river (233 B.C.). Shih Huang Ti (221–206 B.C.), who built the Great Wall and burnt

gleaming. This is where one must put on record the difference between the points of view of the Chinese and European collector. The former will polish and cherish his bronzes with loving care; the latter likes them to remain greenish or greenishgreyish as a result of long burial.

Is it merely fanciful and foolish to see in the delicate playfulness of the little porcelain box (Fig. 3), mounted in Europe in ormolu, a logical development after another thousand years? When the rough-glazed pottery horse was made, porcelain—true porcelain—was just being evolved, and a millennium of consistent work in the kilns ended in this kind of butterfly fragility, which the austere sometimes label degenerate. The thing—with numerous others of its kind—was made to



FIG. 3. MADE FOR THE EUROPEAN MARKET AND WITH A EUROPEAN ORMOLU MOUNT: A CHINESE PORCELAIN SNUFF-BOX, DECORATED WITH LANDSCAPE SCENES WITH FIGURES,

IN A DELICATE FAMILLE ROSE PALETTE: CH'IEN LUNG PERIOD. (2 ins. high.)

compete with similar luxurious boxes turned out at Meissen and at Sèvres in porcelain, and in painted enamel at several places. Reign of Ch'ien Lung 1736–1795, and painted in the Famille Rose palette—the name which the French, who were the first to attempt a classification of Chinese porcelain, gave to the eighteenth-century wares which, in addition to other colours, made use of a lovely rose-pink.

Not many technical developments came to China from the West; this was one of them, the colour known as "purple of Cassius," discovered by Andreas Cassius, of Leyden, about 1650 and derived from gold chloride and tin. It is familiar enough from the thousands of export pieces manufactured throughout the eighteenth century, by no means all of them of the splendid quality, either of body or decoration, of this small box and others like it. Indeed, one of the first lessons to learn is to use one's eyes and to distinguish between the fine porcelain, whether made for home

consumption or for export to Europe, and the comparatively coarse bluish-grey pieces which came over here in such vast numbers—bluish-grey glaze but with quite attractively painted designs

These are pleasant enough and in their day had a considerable influence upon some of our own potters. Europe had always imitated the Chinese, sometimes successfully, both with porcelain, as soon as that was technically possible, and before that—and indeed afterwards—in the tinenamel pottery usually called Delft. The odd thing is that the English delftware factories during the eighteenth century took these Chinese bluishgrey export wares so seriously that they toned down their natural creamy glaze to be closer to their models. Personally, I find the bluish tone very attractive—but I have to admit that very few agree with me.



FIG. 2. A CHINESE POTTERY TOMB MODEL OF A STANDING HORSE, COVERED IN AN AMBER GLAZE: T'ANG DYNASTY. (17½ ins. high.)

Photographs by courtesy of John Sparks.

all the records of the past he could find, is said to have instituted a search for them—and from that day to this they have not been seen. Some of this may be as nonsensical—or as factual—as the Theseus legend; it does, however, indicate that the origins of bronze-founding in China go back much further than we can yet prove by reference to the actual objects.

By the time this pottery horse (Fig. 2) was placed in the tomb of some seventh- or eighth-century A.D. grandee, together with similar pottery models of his grooms, camels, concubines and musicians, sufficient to ensure his comfort in the world of shadows and to impress the neighbours with the importance of the family, who very likely mortgaged the future to pay for the funeral expenses—these bronzes, by then nearly 2000 years old, had become legendary. If they still remained in the care of the family, they would be dark and

SOME DISTINGUISHED WORKS BY DUTCH, FLEMISH AND FRENCH MASTERS.



"THE CASTLE BY THE RIVER," BY SALOMON VAN RUYSDAEL (1602-1670): THE MOST OUTSTANDING OF THE PAINTINGS NOW IN THE HALLSBOROUGH GALLERY. (Oil on canvas: 27½ by 38 ins.)



"RIVER SCENE WITH BOATS AND FIGURES," BY JAN BRUEGHEL II (1601-1678): ONE OF A DELIGHTFUL SMALL PAIR OF PAINTINGS BY THIS ARTIST. (Oil on canvas: 5½ by || ins.)



"FIVE MODE AT A WINDOW," BY THE PROLIFIC AND HUMOROUS DUTCH ARTIST ADRIAEN VAN OSTADE (1610-1685): A SIGNED PAINTING IN THE HALLSBOROUGH GALLERY. (Oil mu panel: 10½ by 9 ins.)



"FLOWERS IM A GLASS VASE," BY ROELANDT SAVERY (1576-1639): AN INTERESTING FLOWERPIECE SHOWING THE INSECT DECORATION POPULAR AT THE TIME.

(Oil on copper:

11½ by 7½ ins.)



"LANDSCAPE," BY JEAN-BAPTISTE JOSEPH PATER (1695-1736): AN UNUSUAL PAINTING FOR THIS PUPIL OF WATTEAU, SINCE IT ENTIRELY LACKS 'FIGURES. (Oil == canvas: 20½ by 16½ ins.)



"AUTUMN": A POWERFUL LANDSCAPE BY THE FRENCH ARTIST JEAN PILLEMENT (1727-1808),
SIGNED AND DATED 1791. (Oil on comment 12% by 18% ins.)

Among a small collection of varied paintings which can be seen at the William Hallsborough Gallery, 20, Piccadilly Arcade, London, until May 15, are a number of outstanding works, probably the most exciting of which is a large mellow riverscape, of a wonderful peace and splendour, by the Dutch artist Salomon van Ruysdael, the uncle of Jacob van Ruysdael. Bathed in a soft yellow light, the canvas shows admirably this artist's skill at depicting scenes of water and sky. Also in the exhibition, which is called "Fine Paintings of Four Centuries," are two sets of "pairs," one by the younger Jan Brueghel,



"WINTER," THE SECOND OF THIS STRIKING PAIR OF CANVASES BY JEAN PILLEMENT [1727-1808].

NOW ON VIEW IN THE HALLSBOROUGH GALLERY. (Oil on canvas: 12% by 18% ins.)

the other by the French eighteenth-century artist Jean Pillement. The Brueghels are small, characteristically busy and colourful scenes; the Fillements strong, dramatic and full of contrast and atmosphere. A still-like by Fantin-Latour contains impeccably painted rose which glows from the canvas, while informal flowerpiece by Savery positively crawls with the insect and reptile life so beloved by painters at the time. Among the remainder is rare landscape by Pater and a brilliant, jocular study by Ostade. It is advisable, though not vital, to see the paintings by appointment.

A MINE OF MARBLE STATUARY: LIFE-SIZE RELIEFS DISCOVERED AFTER A CHANCE FIND IN THE ASIA MINOR CITY OF APHRODISIAS.

By AHMET DÖNMEZ, Assistant to the General Director of Museums and Antiquities of Turkey, Ankara.

A PHRODISIAS is one of the major cities of Ancient Caria, in south-west Turkey. The remains of the ancient city are in a village called Geyre, near the modern town of Karacasu, in the province of Aydin (Fig. 1). Aphrodisias was situated on a rich plain which opens on the Great Meander valley and it grew large and important in the Roman period. It became a flourishing centre of the cult of Aphrodite and was the scene of many festivals and ceremonies, becoming famous also as a centre of a school of sculpture. A large part of the ancient city is still standing, notably the Temple of Aphrodite, the Propylæa

(Fig. 2) to the temple area, the stadium and some columns of the Agora. In addition a good deal of the city wall and some of its main gates are still standing.

There has, however, been no large-scale excavation. Some French scholars explored the site in 1913 and 1914, and there was a smallscale Italian excavation in 1937.

During 1957 local villagers were clearing out an ancient water system which they planned to use again when they came upon certain marble reliefs. As a result of reports by the local authorities to the Government, I made an examination and later carried out excavations there on behalf of the Museums and Antiquities Department of the Turkish Government; and in the course of this work, which took about a month, many new marble reliefs, sculptures and fragments were brought to light and moved to the local museum, where they are now on exhibition.

In the middle of the fourth century A.D. during the reign of Constantine the Great, the city wall was rebuilt. During this restoration many architectural elements and works of art belonging to the earlier city were used, many of them being set face downwards. The new pieces discussed

in this article were apparently so re-used. They were found on the outside of the northeast corner of the city wall, lying in the ancient canal (Figs. 7 and 8) which ran on the outside of the wall and they had, in fact, sunk into it. They consist of four almost complete marble reliefs, one marble statue and one marble head.

The four complete reliefs represent a personification in its entirety. The first piece shows a Herm on one side and a standing figure beside it (Figs. 9-11). The Herm, presumably, represents the place where the celebration was held and it must be the beginning of the series. The second figure on the same piece shows the life-size figure of an old man, apparently walking from the Herm. He is wearing a himation and holding a spear or rod in his left hand, the right hand being missing. From the inscription in the top right corner, it is clear that he represents Demos, the People. In addition the composition includes ribboned garlands.

The section which must originally have stood next to the figure of Demos has not been found. It probably, however, showed a representation of the city, Polis; and indeed a fragment, showing the word Polis, was

found during the excavations. Another fragment shows a foot and part of a leg walking towards a small altar, which might be the central subject of this section of the composition and the leg might belong to the personification of the city. It is also noteworthy that the



TURKEY TO SHOW THE LOCATION OF APHRODISIAS AND ITS RELATION TO OTHER ANCIENT CITIES OF THE REGION.

garland on the right side of the Demos relief is incomplete and possibly the remainder of this would be on the Polis section.

The central and most important section of the relief contains two figures, both of life-size (Figs. 5 and 7). On the left, according to the inscription, is Zoilos, being honoured by (on the right) Timé (the personification of Honour). Earlier in classical history there was a famous philosopher called Zoilos. Possibly the Zoilos in the Aphrodisias relief is a later philosopher of the same name. In the relief he is wearing a himation covering the whole body. The head, which would be in high relief, is missing. Both arms are broken.

Timé is honouring Zoilos by placing either a crown or a garland on his head with her right hand. In her left she holds a cornucopia. Her head is missing and the upper part of her body is naked, the left shoulder and lower part of the body being covered with the heavy drapery and deep curves of a himation. The inscriptions on this section are very well preserved and clear.



FIG. 2. SURVIVING COLUMNS OF THE PROPYLÆA, OR FORMAL GATEWAY TO THE TEMPLE AREA. The city Aphrodisias was largely rebuilt about the time of Constantine the Great; and there are considerable remains still standing. Very little excavation has been done, however, and the site might well repay a large-scale investigation.



FIG. 3. A RECENT CHANCE FIND AT APHRODISIAS: THE MARBLE HEAD OF A PRIEST OR PHILOSOPHER, A LITTLE OVER LIFE-SIZE. IT WOULD SEEM TO DATE TO ABOUT THE MIDDLE OF THE 2ND CENTURY A.D.

The next section is a female figure which is the most impressive of them all (Fig. 6). It is made to about the same measurements as the others, but there are some differences, particularly of style. It was found in three pieces and put together later. It must have been an attendant on the deities who joined in the honouring of Zoilos and is of a kind common in many religious scenes. In style it belongs to the fourth century B.C., but was presumably made later but in the earlier style.

The last piece of the group still largely preserved is the figure Aion (Figs. 4 and 8). Aion, a seated elderly figure, represents the spirit of age and immortality. A himation, hanging in curves over a sleeved tunic, covers the whole of the body and part of the head: and he appears to be sitting on a stool with an animal leg, perhaps a lion's or a bull's leg. The identifying inscription is visible at the top left-hand corner. The subject and style of the relief as a whole date it to the second century A.D. and probably the second half thereof.

While these excavations were being carried out a marble statue in a himation. most probably male, was found some 50 to 60 yards south of [Continued opposite.



FIG. 4. POSSIBLY THE RIGHT-HAND END OF THE SERIES OF RELIEFS FOUND AT APHRODISIAS: AION, THE PERSONIFICATION OF OLD AGE, SEATED.

HOW A CITY HONOURED THE PHILOSOPHER ZOILOS: NEWLY-FOUND RELIEFS FROM TURKEY.



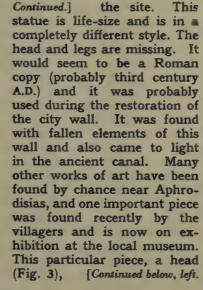
FIG. 5. THE CENTRAL PANEL OF THE FRIEZE: TIME (HONOUR), ON THE RIGHT, CROWNING THE PHILOSOPHER ZOILOS, WHO IS NAMED THE INSCRIPTION ABOVE.



FIG. 6. THE MOST PLEASING OF THE PANELS-OF THE FRIEZE: A DRAPED FEMALE FIGURE, ALMOST CERTAINLY AN ATTENDANT ON SOME GOD OR GODDESS.



FIG. 7. THE CENTRAL PANEL (SEE ALSO FIG. 5) AS IT STILL LAY IN THE ANCIENT CANAL, WHICH THE LOCAL VILLAGERS HAD BEEN CLEANING OUT WITH A VIEW TO RE-USING IT.



(Right.) FIG. 8. THE PANEL OF THE SEATED OLD MAN (FIG. 4) AS IT WAS DISCOVERED. IN GENERAL IT WOULD SEEM THAT THE FRIEZE DATES FROM THE 2ND CENTURY A.D. AND PROBABLY THE SECOND HALF.



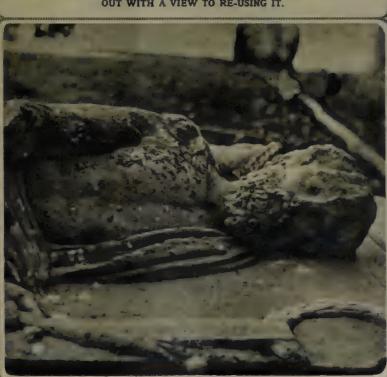


FIG. 9. A DETAILING OF THE LEADING SECTION (FIG. 10) TO SHOW THE FEATURES OF DEMOS, THE PERSONIPICATION OF THE PEOPLE, AT THE HONOURING OF THE PHILOSOPHER ZOILOS.



FIG. 10. THE LEFT END OF THE FRIEZE: THE PERSONIFIED DEMOS (RIGHT) MOVES FROM THE HERM—A CITY LANDMARK.



FIG. 11. A CLOSE-UP OF THE HEAD OF THE HERM IN FIG. 10.

SUCH PILLARS (OFTEN SERVING AS MILE-POSTS) WERE

COMMON IN NEARLY ALL GREEK CITIES

Continued.] probably belonged to the statue of a philosopher or a priest and is just over life-size, the head being 13\frac{3}{2} ins. (35 cm.) high. Stylistically it appears to belong to the middle of the second century A.D. The task of

restoration and preservation of the ancient remains of Aphrodisias has now been undertaken by the Turkish Government, and it is hoped that this work will bring to light many other works of art.



IN AN ENGLISH GARDEN.

SOME little time ago I wrote about the hardy white arum lily the form which has been called the "Crowborough" variety. My two hearty clumps went

to earth last autumn on the occasion of the first appreciable frost. The leaves in one night collapsed, looking like boiled spinach. Nothing above ground was left but a forest of raw messy stumps of what had been leaf stems, no more



THE HARDY "CROWBOROUGH" VARIETY OF THE ARUM (ZANTEDESCHIA ÆTHIOPICA) GROWING IN AN OPEN BORDER AT WOKING. (Photograph by J. E. Downward.)

than a couple of inches high. But now the plants are beginning to show signs of pushing up a fresh crop of leaves for this year's display. By way of a test of hardiness, I bought last summer a sturdy clump of the ordinary commercial arum lily, the one which frequents funerals, Easter festivals and hotel and restaurant foyers. This I planted out in the bed in which my two clumps of the hardy variety have flourished quite unperturbed by several typical Cotswold winters. There it settled in quite comfortably, and got thoroughly established before autumn set in. But at the very first appreciable frost last autumn, the plant perished, utterly and completely, a martyr to horticultural experimental science. I had always had doubts as to the plant's hardiness, or otherwise, and this trial assured me that

in this part of the country, the Cotswolds, the ordinary white arum of commerce can not be relied on for hardiness in open ground. But there of course, many districts in Britain where it is quite safe in the open without special winter protection. It is hardy, too, when planted in garden pond or pool, in a depth of 18 ins. or so of water.

I do not know how far the hardy "Crowborough" arum has spread among private gardens, and in hardy plant nurseries, but there can be little doubt that this fine plant is sure to become popular among keen amateur gardeners, for it is extremely handsome and decorative, and lends a fine sub-tropical air to whatever part of the garden it inhabits.

In gardens where there is no suitable "sheet of ornamental water"to borrow a phrase from estate agents' jargon-in which to grow the white arum, it might well be grown in large pots, which could be plunged to the

THE HARDY ARUM.

By CLARENCE ELLIOTT, V.M.H.

rim in some chosen sheltered spot in the open garden for the spring and summer, and then stored for the winter in some shed or attic, with the pots swaddled in sacking or straw for extra safety. Apart from the ordinary white arum lily of commerce, there is a giant form in cultivation, as well as a very charming dwarf. The plant has, too, several fairly near relatives with yellow flowers, but the finer of these are not hardy in the open, whilst others are dwarfs, and lack the stately stature of the normal white arum, "Lily of the Nile," or "Pig Lily"—whichever name you prefer. Here surely is promising scope for the plant hybridist, to cross the white-flowered hardy "Crowborough" arum lily with pollen from one or other or all of the yellow-flowered species.

And what fun to marry our native wild arum, the "Lords and Ladies" of

our lanes and hedge bottoms, to various of the more lordly arums, including the "Crow-borough" variety. I do not think it would be too farfetched a mating to have a fair chance of success. And here I hope I may be forgiven if I go off the rails and discuss the sex life and mating habits of our wild "Lords and Ladies." The quotes, by the by, are to avoid any slur on our aristocracy. The flowers of the "Lords and Ladies" are most cunningly planned in such a way as to ensure that crossfertilisation takes place. In other words, the flowers do not become pollinated with their own pollen, but with pollen from another specimen. Insects presumably in search of nectar enter the flower by walking down the central clublike column, passing over a band of downward-pointing bristles or hairs. Having passed this barrage, they reach the nectar at the base of the flower, and then find they are trapped by the barrage of bristles, which were easy enough to pass over owing to their downward arrangement. Above this barrage are the female stigmas. Below the barrage are the pollen-bearing anthers. There, at the base of the flower, the insects remain, ketched—until other insects arrive with pollen from another arum flower and pollinate the said stigmas. When this has taken place, the barrage of bristles withers, so

that the insects can now crawl up the central column and make their escape, and, at the same time, carry off pollen with which they have become dusted, and se

take it to the next arum that they visit.

The fleshy roots of our wild arum, "Lords and Ladies," Cuckoo Pint, or Wake Robin are, by the by, edible and have been, and possibly still are, used for human consumption under the name Portland arrowroot, but only after the poisonous juices have been got rid of. This, I believe, is done in some way by heat. As a schoolboy, always ready to experiment with any strange and to me new food, I tried a root of Portland arrowroot, without first treating it in any way with heat. It was horribly unpleasant,



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ARUMS GROWING WITH THEIR FEET IN WATER. EVEN THE NON-HARDY VARIETIES SURVIVE THE WINTER IF THEY ARE PLANTED THE WATER.

Photograph by D. F. Merrett.

and although I did not swallow any of the solid, the juice burnt my tongue and throat like fire, and there was, too, a track of fire far down my inside. But I survived.

Rather to my surprise, I can not find any mention of "Lords and Ladies" in Fernie's "Herbal Simples." I would have thought that at least it might have been used for tormenting witches, or physicking sick bats. In one botanical work, in which I was once reading about Arum maculatum. it was stated that the flowers had an unpleasant smell. Personally, I have never noticed this, though I have met certain other members of the family which had a rare gift for offensiveness.

PERSONALITIES OF THE WEEK: PEOPLE AND EVENTS IN THE PUBLIC EYE.



A COMMONWEALTH POST: SIR ALEXANDER CLUTTERBUCK. Sir Alexander Clutterbuck, who is sixty-two, has been appointed Permanent Under-Secretary of State, Commonwealth Relations Office, in succession to Sir Gilbert Laithwaite. He was High Commissioner in Canada in 1946 and in India from 1952 to 1955. In 1955 he became H.M. Ambassador to the Republic of Ireland.



A NEW CHIEF TEST PILOT: MR. T. P. FROST. MR. T. P. FROST.
Mr. Tom Frost, who is thirty-six, has been appointed Chief Test Pilot of Bristol Siddeley Engines Ltd. During World War II Mr. Frost served with the Royal Air Force in the Middle East. Later he became an A.1 instructor. In his new post he will test Bristol Siddeley engines such the Olympus, Orpheus and Proteus.



TO BE HIGH COMMISSIONER IN GHANA: MR. A. W. SNELLING. GHANA: MR. A. W. SNELLING.
Mr. Arthur Wendell Snelling, who
is at present an Assistant UnderSecretary of State at the
Commonwealth Relations Office,
has been appointed High Commissioner in Ghana. Mr. Snelling,
who is forty-four, was Deputy High
Commissioner in New Zealand from
1947 to 1950 and in South Africa
from 1953 to 1955.



TO BE AMBASSADOR IN IRELAND: SIR IAN MACLENNAN. Sir Ian Maclennan, British High Commissioner in Ghana, has been appointed Ambassador to the Republic of Ireland in succession to Sir Alexander Clutterbuck. Sir Ian Maclennan, who is forty-nine, was the first British High Commissioner in the Federation of missioner in the Federation of Rhodesia and Nyasaland, from 1953 to 1955.

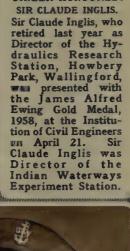


TO BE THE NEW BISHOP OF DERBY: THE RT. REV. G. F. ALLEN. THE RT. REV. G. F. ALLEN.
The Queen has approved the nomination of the Right Rev.
Geoffrey Francis Allen, Principal of Ripon Hall, Oxford, for election
Bishop of Derby. The Bishop, who is fifty-six, was ordained in 1927. He was chaplain to the British Embassy at Chungking from 1942 to 1944, and Bishop in Egypt from 1947 to 1952.



A VERSATILE CHARAC-TER ACTOR: THE LATE MR. J. GLEASON. MR. J. GLEASON.
Mr. James Gleason died on April 12, aged seventy-two. He had enjoyed I long career, having made his stage début at the age of three months.

Principally a character actor, he also wrote film-scripts, and was a director and was a director and stage-manager. Among the films in which he appeared "Arsenic and Old Lace."



A HYDRAULICS EN-

GINEER HONOURED:

SIR CLAUDE INGLIS.





TO SUCCEED MR. JOHN FOSTER DULLES AS UNITED STATES SECRETARY OF STATE: MR. CHRISTIAN HERTER. Mr. Christian Herter, who is sixty-four, was appointed Secretary of State in succession to Mr. Dulles un April 18. Mr. Herter has been Under Secretary of State since 1957. He was Governor of Massachusetts from 1953 to 1957. (Photograph by Fabian Bachrach.)

(Right.) A GREAT DUTCH CON-DUCTOR: THE LATE DR. E. VAN BEINUM. Dr. Eduard van Beinum died on April 13, aged fifty-seven. Much of his musical career was devoted to the Amsterdam Concertgebouw Orchestra, of which he was princi-pal conductor. In 1949 and 1950 he held a similar post with the London Philharmonic Orchestra. His last concert in London was in 1958.



TOWN AND COUNTRY PLANNING: THE LATE SIR G. PEPLER. SIR G. PEPLER.
Sir George Pepler, one of the founders of town and country planning, died on April 13, aged 77.
Called to the Local Government Board in 1914, he remained in this central department all his life. He ministry of Housing and Local Government, and was ment, and was technical head of

planning until 1946.



WANTED ON A CHARGE OF ALLEGED REVOLUTIONARY ACTIVITY: DR. ROBERTO ARIAS AND HIS WIFE, DAME MARGOT FONTEYN, WHO WAS DETAINED.

It was reported on April 21 that Dame Margot Fonteyn, the great ballerina, had been detained in Panama in connection with the alleged salvaging of a sunken boat-load of rebel arms. A warrant had already been issued for the arrest of her husband, Dr. Roberto Arias, the former Panamanian Ambassador to London, who was charged with being involved in a plot against the Government.



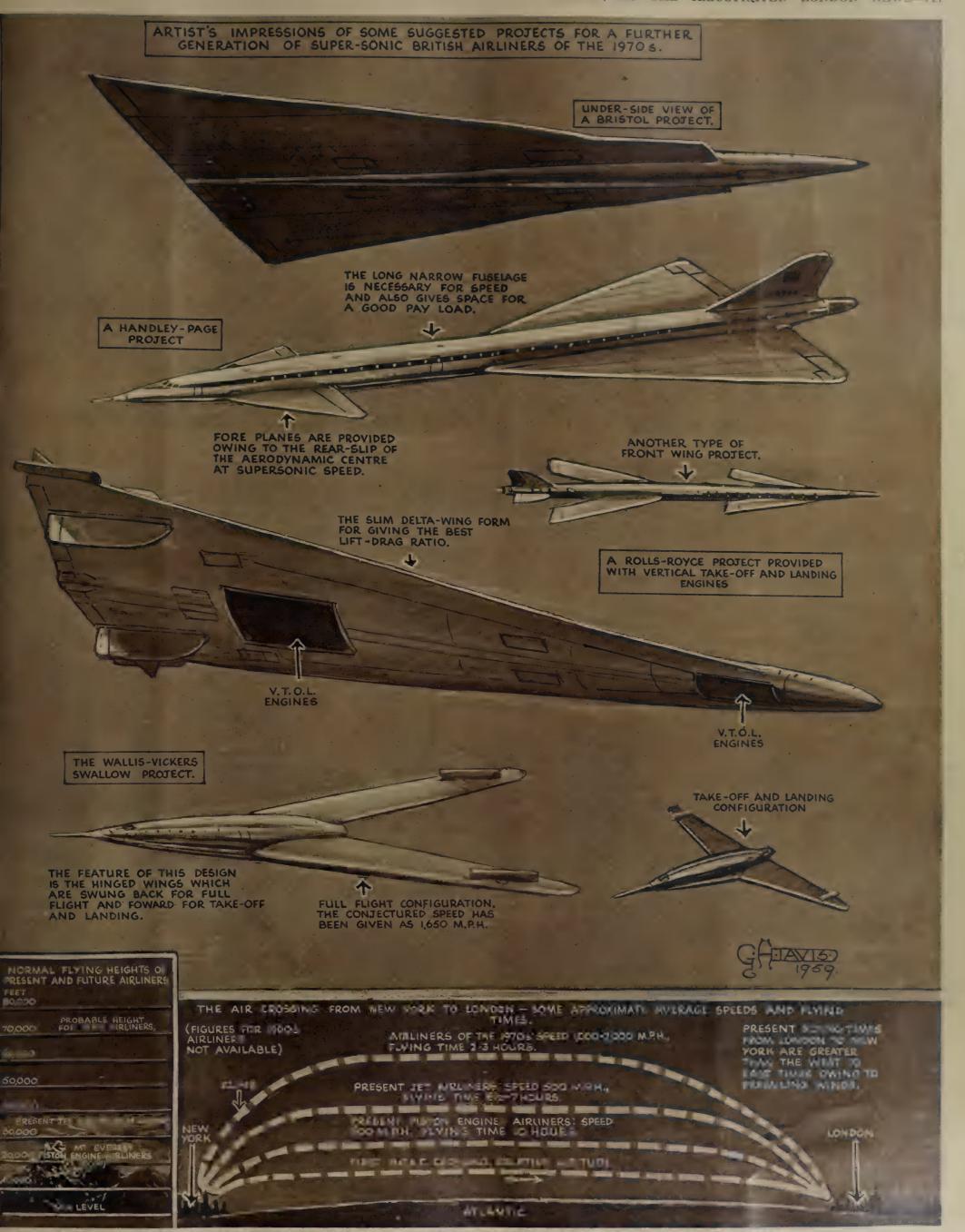
STILL YOUNG AT SEVENTY: THE SCREEN'S MOST CELEBRATED COMEDIAN, MR. CHARLIS CHAPLIN, UNWRAPS BIRTHDAY PRESENTS, WATCHED BY TWO OF HIS CHILDREN
Mr. Charles Chaplin seventy on April 17. He spent the day quietly in his alla at
Vevey, overlooking the Lake of Geneva, here he has lived with his wife Constant and the children since 1952. He is reported to be writing his memoirs and to be planting a constitution in which the famous "Charlie Chaplin" of old will appear again.



THE SHAPE OF THINGS TO COME: TWO BRITISH AIRLINERS OF THE

In his drawing, Mr. Davis illustrates two notable British passenger aircraft of the future—the Vickers VC10 jet airliner, thirty-five of which have been ordered by B.O.A.C., and the De Havilland 121 continental jet airliner, twenty-four of which have been ordered under an initial contract by B.E.A. While the speed of the 121 is to be more than 600 m.p.h., that of the VC10 has not yet been disclosed. The 121 is being designed to be able to operate from runways 6000 ft. in length and is due to go into service with B.E.A. in 1963. In the same year, a fleet of VC10s is to be delivered to B.O.A.C., these aircraft

being intended for B.O.A.C.'s African, Australian, Far Eastern and North Atlantic routes. The VC10 was the first aircraft designed with four engines grouped at the rear of the fuselage. (The French medium-range Caravelle airliner, production versions of which were designed to be powered by Rolls-Royce turbojet engines, has two engines mounted to the rear of the fuselage.) Advantages of this arrangement of the engines are indicated in the drawing. Concerning British airliners which may follow the VC10 and I21, some designs for which are also illustrated, recommendations have now been made by the



1960s AND ARTIST'S IMPRESSIONS OF SOME POSSIBLE LATER DESIGNS.

Supersonic Transport Aircraft Committee, set up by the Ministry of Supply. As announced in Parliament on April 13, the Committee recommends that detailed design work should be undertaken on two first-generation supersonic airliners. One of these would carry 150 passengers on the non-stop London and New York route, cruising at about 1300 m.p.h., and the other would carry about 100 passengers for stage lengths of up to 1500 statute miles, cruising at about 800 m.p.h. In striking contrast with this recommendation are the reported opinions of some American experts, according to which it would be

better to build even faster aircraft from the start, and airliner with a speed of 1300 m.p.h. would probably be superseded too rapidly. The movable wing aircraft shown above is based on a project of Mr. Barnes Wallis, the designer of the famous R.A.F. dam busting bomb. Crossing the North Atlantic for air (for which the flying time from New York to London for present time airliners, cruising at 28,000 to 33,000 ft, is about hours) is becoming the popular, and last year for the first time there were more air than sea as on this route. The number of air passengers during 1958 was





THE WORLD OF SCIENCE.





MUCH ADO ABOUT DECAPOD CRUSTACEANS.

succession By MAURICE BURTON, D.Sc.

CRABS, as we all know, grow by a succession of moults. Having a hard shell they cannot grow continuously in size. It may be that very few things, if any, grow by a slow and continuous increase in size but by a series of jumps. They may be irregular jumps, or they may be regular, according to the subject, but they tend to be imperceptible. It is otherwise with animals having tough skins, such as crabs and insects. With them, growth is very obviously in jumps. The animal sheds its outer covering. The body increases in size, and a new coat is laid down. Thereafter, and until the next moult, the animal is as restricted as a knight in armour.

It was natural to suppose that the timing of the moult would be governed by the growth of the body within the hard coat, whether that coat was the tough skin of an insect or the hard shell

of a crab. It was usual to express it somewhat in these terms: that the growing body burst its shell, the animal crawled out of it, put on weight and then clothed itself in m new shell. The matter is not as simple as that, and a new exhibit in the American Museum of Natural History in New York is designed to show, among other things, how it happens.

This new exhibit is devoted to background information on crustacean research. Much of it deals with research on marketable shrimps, lobsters and crabs. You might call them shell-fish, but that word also includes any aquatic invertebrate, especially oysters. The title given to the exhibit is therefore: "Shrimps, Lobsters and Crabs: Much Ado About Decapod Crustaceans," and I am quite sure that whoever had to draft the title would have given a lot for a vernacular name to substitute for "Decapod Crustaceans."

The layout of the exhibit reflects the growing tendency not merely to take a harvest from the sea but to leave something there for future generations. This can only be done by increasing our

years, Hanström found a second secretory organ in the eye-stalks, and he also established that this and the x-organ were present in the "Decapod Crustacea" generally. Since 1947 a number of scientists have been following this trail, and their findings, briefly, are that the x-organs convey a hormone, or the substances from which the hormone is formed, to the second organ, and from this the hormone seems to be released into the blood

Dr. Bliss set out to investigate the effect of this hormone, in the hope of answering the question: "Why does a crustacean grow and what causes its growth to cease?" In other words, what lies behind the make-and-break of crustacean moulting? What she found was that under certain conditions



A LAND CRAB AT THE BEGINNING OF ITS MOULT, WITH THE SHELL (OR CARAPACE) ABOUT TO BREAK AWAY. DR. BURTON DESCRIBES ON THIS PAGE A SERIES OF RESEARCHES INTO THE MOULTING HABITS OF THE LAND CRAB.

Photographs by Dorothy E. Bliss, by courtesy of the American Museum of Natural History.

This may prove that moulting is influenced by the amount of light falling on the eye, but it does not prove that growth is also inhibited by the same factor. The crabs themselves provided a valuable clue here. Crabs, whether living on land or in the sea, are very prone to accident, especially to the legs. Their response to leg injuries is to cast off the damaged limb and grow a new one. A crab can, in fact, lose all its legs and still survive. It is not unusual to find crabs on the shore with one or several legs missing, and, rarely, one may find them with all legs gone, with what look like fleshy stumps where the legs should be. These are the new limb-buds.

As with the growth of the body, regeneration of limbs takes place with the moult. Therefore, crabs that have lost one or more limbs are useful subjects for showing whether preparations for the

moult are taking place, and they also serve as an index of the amount of growth that is taking place. They also serve to isolate the factors causing growth and moult to proceed or be inhibited.

The three basic conditions for growth and moult are, as we have seen, darkness, low temperature and high humidity. A crab kept at a constant low temperature, such as it would find in a burrow, was placed alternately in light and in darkness. While in the dark, regeneration of the limb took place, but ceased when the crab was brought into the light. After the second change from darkness to light, however, normal regeneration proceeded, as if the impulse to do so had reached a point where external conditions could no longer check it.

A similar result was seen, but on a larger scale, in a crab that had lost all its limbs. These were re-grown even during full exposure to light, high temperature and low humidity. It was as if the extreme need of new limbs caused the animal's system to surmount obstacles normally imposed by external conditions and internal hormones. Naturally, the conditions needed by a crab



BUT ARE TOO SOFT FOR USE.

knowledge, and this means research to determine what steps shall be taken to ensure a continuation of the harvest. Such research often throws up information which, for the moment, appears to have no more than an interest value. One panel in the exhibit, for example, deals with growth and moulting. It is based on researches carried out by Dr. Dorothy E. Bliss, at Harvard University, on a land crab commonly found in Bermuda and the West Indies. A land crab may be far removed from shrimps and lobsters in matters of commerce, but the way they all grow and moult is similar, and a land crab is the easier to watch.

The modern story of crabs moulting begins with a discovery by Professor Bertil Hanström, of Lund University, Sweden, in 1931. This was that each eye-stalk in a particular crustacean he was then studying contained nerve-cells that could be distinguished from ordinary nerve-cells in that they contained a secretory material. The nerve-cells therefore constituted a gland, which was named the x-organ. During the next sixteen

the hormone prevented moulting taking place. So long as the crab is exposed to light, to a relatively dry atmosphere and to a high temperature, it will not moult. And the operative factor in this appears to be the light falling on the eye. Therefore, in order to moult, the crab must first seek conditions that will inhibit the action of the hormone. It must retire to a burrow in the ground where it is dark, where the humidity is high and the temerature is constant and relatively low.

It is always said that a crab about to moult must hide itself because once it has cast its shell, and before the new one is laid down, its soft body would be a sitting target for any enemy. That is, indeed, the case, but the fact that a crab does hide is secondary. The primary cause is that it cannot moult as long as it is exposed to light, and it is of interest to see how Dr. Bliss made certain of this. The first test was simple. The crab was blindfolded, an easy enough matter with an animal having stalked eyes, so that it could be done without injuring the subject and thereby giving rise to the possibility of abnormal behaviour.

The second test needed more skill but gave more precise results. A crab was kept in darkness. An eye was removed and, just as it was about to moult, the eye from another crab, living under normal conditions of light, was grafted in its place. The preparations for the moult were halted. Clearly, it was something in the eye or the eye-stalk that brought about the inhibition



NEARING THE END OF THE MOULT: THE CLAWS ARE OUT AND ARE SUPPORTING THE CRAB WHILE IT SHEDS THE LINING OF ITS STOMACH.

living permanently in water would be different from those of a land crab. There would be no need to seek a place of higher humidity, and temperature is unlikely to have much effect. The incidence of light falling on the eyes would then be obviously more important.

A freshwater or marine crab would also have another advantage, but it is one that the land crab gains by retiring underground. There are in a crab's body two cavities, the pericardial sinuses, which even before the moult start to absorb water. This is then diffused through the body, causing it to swell before the new coat is formed. This is the primary cause of the sudden increase in size at the moult. In the land crab the sinuses can only take up water if that part of the body where abdomen and thorax meet. that is the hind edge of the shell, is kept in contact with moist sand. Moreover, the hormone from the two organs in the eye-stalk is necessary for this as well. A crab with its hind edge in contact with moist sand, but its eyes illuminated, absorbs no water, but does so as soon as it is "blindfolded."

LAND, SEA AND AIR: FROM A "FLYING CRANE" TO A SIR-VIVAL CAR.



A BRITISH "FLYING CRANE" IN ACTION: THE UTILITY VERSION OF THE WESTLAND WESTMINSTER LIFTING A 6736-LB. SECTION OF AN ARMY FLOATING BRIDGE.

The Westland Westminster is a private venture helicopter, capable of carrying forty passengers or serving in a number of other capacities. The prototype, shown here, is equipped to act as "flying crane" vehicle with civil and military applications.



A "TRACTOR UN STILTS" COMPARED WITH THE SAME TYPE IN NORMAL SHAPE: AN INGENIOUS ADAPTATION, FOR USE AMONG SOFT FRUIT AND ALLIED CROPS.

This device, which is an adaptation of the Massey-Harris-Ferguson tractor, is called the "Lenfield Flamingo" and it is designed for working among currants, gooseberries, tomatoes, and the like. It has a 6-ft. clearance and so can be driven over rows of bushes.



STRIKING EVIDENCE OF THE POPULARITY OF BRITISH SPORTS CARS WITH AMERICAN DRIVERS: SEVENTY TRIUMPH T.R.3s, WITH U.S. DRIVERS, AT THE START OF A EUROPEAN RALLY. These cars, at London Airport, were being collected by U.S. purchasers and then were to be driven by them on the Continent for a European Rally organised by the Triumph Sports Car Club. After the rally, they were to return to England, for trans-shipment to the States.



THE SIR-VIVAL FOR SURVIVAL ON MODERN ROADS: AN EXTRAORDINARY CAR INVENTED AND

PRODUCED BY MR. WALTER JEROME, OF WORCESTER, MASS.

It is claimed for this "dodgem-car"-like vehicle that the two-section design enables it to absorb collision impact by minimising inertia pull, and makes for better steering and control on curves.

The driver is in a high seat, with wide views in all directions.



STATED TO BE THE BIGGEST TANKER EVER BUILT AT BELFAST: THE 42,000-TON BRITISH STATESMAN, BUILT BY HARLAND AND WOLFF FOR THE B.P. COMPANY, SAILING DOT OF BELFAST LOUGH, TO BEGIN MER SEA TRIALS ON APRIL 17.

TH

continued to beat:

DARE SAY it was odd to be thinking

smith, the other night—I really must remember

to call it the Lyric Opera House—but three lines

The King will follow Christ, and we the King

In whom high God hath breathed a sacred thing.

Fall battleaxe, and flash brand! Let the King reign.

of Tennyson at the Lyric, Hammer-

THE WORLD OF THE THEATRE

FIRE IN THE NORTH

By J. C. TREWIN.

right actor: Patrick McGoohan. Here he has made one of the most exciting personal successes for a very long time.

The word "brand" can mean both "sword" and "fire." We have both in Mr. McGoohan. He is tall, governing of mien, craggily handsome. Throughout the play, the thunder sounds in his voice, and in his eyes we see the lightning. There can be no compromise. The actor cannot afford compromise; he, too, must cry "All or Nothing," and Mr. McGoohan's performance is an extraordinary reply to scholars who have claimed that the part is unactable. Nothing written by a great dramatist is unactable, whatever it may appear to be in the study.

At Hammersmith Pastor Brand seems always to be far larger than life-sized: he looms. He is one with the ice-peaks of the Northern land. Richard Negri, who has designed the sets—suggested with grand simplicity—secures a feeling of bleak and terrible beauty, and the actor of Brand is, as he should be, the only player on the same scale. The sets appear almost to dwarf the other players in the mountains and by the fjord; but Brand strides over all. At the end it is the mad Gerd's rifle-shot that brings down the destroying avalanche; but it might just as well have been the roll and flash of Mr. McGoohan's voice.

One can offer simply an impression of this uncanny night in the theatre. I am more anxious to convey something of its effect upon the playgoer than to go into the matter of Ibsen's influences and the writing of Kierkegaard. Brand must pull down the sky upon us: Mr. McGoohan does this. There are other things to recall: the suggestion—for it is no more—of the lashing waters of the fjord beyond the village quay; the hopeless yearning of Dilys Hamlett as, by the window of the bare candle-gleaming room, Brand's wife seeks to talk to her child in his lonely grave; the

practised players both, offer a certain relief to the play's grim single-mindedness; but, when all is spoken, the night belongs to Mr. McGoohan, who seems likely now to climb into the high peaks of the British stage.

I remembered another matter while listening to "Brand." It was while he was writing this play in Rome, he said, that he had on his table a scorpion in an empty beer tumbler: "Now and again the creature seemed to be ailing; then I used to drop a piece of soft fruit into the tumbler, which it fell on with rage, releasing its poison with it; then it was well again at once. Isn't that rather like us poets? The laws of nature seem to apply to spiritual life, too."

If Tennyson seemed remote from "Brand," it was reasonable enough at the Piccadilly Theatre to remember Ben Jonson. The first act of "The Fox of Venice" rests upon "Volpone." Here we have the wealthy Mr. Cecil Fox playing the old trick in a modern Venice, with characters that we can identify as Mosca (certainly) and, perhaps, as Voltore and Corbaccio. In any event, it is "Volpone," and we may suppose that the night will continue to be a modernisation of Jonson just as, say, Eric Linklater's "The Mortimer Touch" was a new version of "The Alchemist."

But it is hardly what we expect. Frederick Knott, who has based the piece upon a novel by Thomas Sterling, turns it into one of the most complicated puzzle-plays I recall, so complicated that one gives up worrying and ceases to find that the surprises shock. In fact, it might be a muddle if it were not for the production of Denis Carey—whose decorative invention means a lot—and for two splendid performances: one of them by Paul Rogers, who manages (and how he does it I cannot say) to persuade us that Mr. Fox is the sort of furious tycoon capable of this elaborate trickery, and another by Newton Blick,

who is probably tired of being called either a fish or a bird, but who contrives here to be a doped eagle with a touch of cod.

And the play? Well, describe it as an exercise in mechanical ingenuity. Some playgoers will enjoy it without reserve; others may treat it as Ibsen's scorpion treated the soft fruit. I found myself pondering not so much on Jonson as upon the late Walter Hackett, who had this way of framing an intricate plot, and of tagging on a solution almost as a last thought. But then he usually had Marion Lorne; and though, in "Mr. Fox of Venice," there is a most authoritative performance by Marian Spencer, it is not what once we would have called a "Lorne character."

So, at length, to Donald Howarth's "Sugar in the Morning" (Royal Court), a mild anecdote that beguiles only because Margaret Johnston is an enchanting actress, even when she must enchant as

a young widow who runs a lodging-house in a North Country town: hardly type-casting. She discovers for the part a voice of squeezed gentility,

bred chiefly on a diet of prunes. As one of her lodgers (a young wife who clearly has trouble with the alphabet, and who may use an abacus when dealing with the milkman) Jeanne Watts acts with a spirit of fun that makes us wish to meet her again very soon. Otherwise, it is calmness itself, in spite of an "Under Milk Wood" set that looks as if the night is going to be cerebral. Not in the least; and I am afraid that, during some of the scenes, Ibsen's scorpion might have slept.



BRAND (PATRICK McGOOHAN) VAINLY TRIES TO STOP GERD (OLIVE McFARLAND) FROM SHOOTING THE HAWK AND BRINGING DOWN THE DESTROYING AVALANCHE: A SCENE FROM THE FIFTY NINE COMPANY'S PRODUCTION OF IBSEN'S "BRAND." (LYRIC, HAMMERSMITH; FIRST NIGHT, APRIL 8.)

" Flash brand!" Obvious enough, maybe, for we were seeing and hearing one of the rarest of Ibsen plays in Britain, the poetic drama of "Brand" (in a sharply-wrought and compressed prose version by Michael Meyer). But there was more, I imagine, at the back of the mind than mere verbal coincidence. Ibsen's drama is the tale of a man for whom all must be secondary to his faith and his driving will. "Live the strength and die the lust! Let the King reign!" Brand's word is "All or Nothing." He knows what he believes to be unanswerable truth, and unswervingly he obeys, although at last, far up in the icy heights, his intransigent Puritanism dooms him.

When we meet Pastor Brand first, he is moving firmly along a dangerous mountain path. Throughout the play nothing will stay him, in spite of the disaster he must bring upon others—among them his child and his wife:

It is Will alone that matters, Will alone that mars and makes, Will that no distraction scatters, And that no resistance breaks.

Brand's resolution, this inflexible will to do what is right in his eyes, needs an actor of the fiercest compelling power. It is not enough to assume the cloak, and to hope that the dramatist will carry you. Brand must have the glow that brings people to him. He cannot be just a theatrical fanatic: it is easy enough to set the jaw. Fifty Nine Theatre, which has had the courage to stage "Brand," so long neglected in Britain, has found, miraculously, the



"ONE OF THE MOST COMPLICATED PUZZLE PLAYS I RECALL": "MR. FOX OF VENICE"—A SCENE IN WHICH GIFTS ARE BROUGHT TO THE WEALTHY BUT AILING MR. FOX (PAUL ROGERS, IN BED) BY (LEFT TO RIGHT) SIR H. PRICE-KNIGHTLY (NEWTON BLICK), ANSON SIMS (CARL BERNARD) AND MRS. SHERIDAN (MARIAN SPENCER), WHILE ON THE RIGHT IS MR. McFLY, MR. FOX'S PRIVATE SECRETARY (JEREMY BRETT). (PICCADILLY THEATRE; FIRST NIGHT, APRIL 15.)

sense of height in the last scenes when the villagers have followed the fanatic upward towards the promised land. Peter Sallis and Patrick Wymark,

OUR CRITIC'S FIRST-NIGHT JOURNAL.

"GILT AND GINGERBREAD" (Duke of York's).—Lionel Hale's new comedy, with Kay Hammond and John Clements. (April 17.)

VARIETY (Palace).—With George Ulmer; the Hollywood singer, Oreste; and Max Miller. (April 20.)

"ALL 'S WELL THAT ENDS WELL" (Stratford-upon-Avon).—Dame Edith Evans, in Stratford for the first time since her Cressida in 1913, appears as the Countess of Rousillon in Tyrone Guthrie's production. (April 21.)

"HOW SAY YOU?" (Aldwych).—A legal comedy by Kay Bannerman and Harold Brooke, with a part for the veteran A. E. Matthews. (April 22.)

WATER-COLOURS AND DRAWINGS: AN EXHIBITION AND A SALE.

(Right.)
"COTTAGE IN WALES," BY J. S. COTMAN (1782-1842), PAINTED c. 1800: FROM THE ELEVENTH EXHIBITION PRESENTED BY JOHN MANNING.

PRESENTED BY JOHN MANNING.

(Water-colour: 6½ by 12½ ins.)

Ninety-six water-colours and drawings are now on view at 8, Bury Street, St. James's, London, until May 9. This exhibition, presented by John Manning, is primarily devoted to British art of the 18th and 19th centuries, although the earlier centuries are represented, chiefly by Continental artists; Carlone and Salvator Rosa, Mignard and Largillièrre, Teniers and Verhaecht, and others. Among the most interesting of the British pictures is this very early Cotman water-colour, a strong, dramatic landscape: also an unusual Hoppner landscape drawn in chalk, a series of studies by Ruskin, and a water-colour and a drawing by Constable.





"MAN PULLING ON HIS HOSE," ATTRIBUTED BOTH TO ANDREA DEL SARTO AND TO BACCIO BANDINELLI. (Red chalk: 16% by 81 ins.)





"HERCULES AND THE HYDRA," BY RUBENS (1577-1640): SIMILAR TO ONE OF HIS ILLUS-



GANYMEDE SERVING NECTAR TO AN ASSEMBLY OF THE GODS," BY PARMI-GIANINO (1503-1540): IN THE CHRISTIE'S SALE. (Pen, brown ink and wash: 7g by 5g ins.)

An important event at Christie's will be the sale, on May 1, of sixteen Old Master Drawings from the collection of the Marquess of Northampton. Two small works by Fra Bartolommeo are probably the most interesting; one delicate and fine study for the figure of Mary Magdalene, and the second much more vigorous "Adoration of the Kings," once ascribed to Raphael. The influence of Raphael is also present in a pen, ink and wash drawing by Francesco Mazzola, called Parmigianino. Other outstanding drawings are two figure studies by Rubens; two studies of ships—one by Spinelli and the other by Tintoretto; a Zuccaro; a Van Dyck portrait study and a sketch of figures, probably by Bandinelli, copying Michelangelo.

(Left.) "HALF-LENGTH FIGURE OF A WOMAN," BY VAN DYCK (1599-1645): A STUDY FOR AT LEAST ONE EXTANT PORTRAIT. (Brush and wash: 9# by 7 16 ins.)

(Right.) "KNEELING WOMAN HOLDING A VASE," BY FRA BARTOLOMMEO (1472-1517): A STUDY FOR AN ALTARPIECE IN S. MARCO, FLORENCE. (Grey chalk: 9 by 71 ins.)



A LITERARY LOUNGER.

By E. D. O'BRIEN.

IN reading, as in life, one is continually being forced to hold one's horses. By that I mean that it is almost always worth restraining emotion and preconceptions in order to give a book a chance. It may contain something which you would have been sorry to have missed. You

may have formulated—and with justification—an adverse judgment of a particular author which his latest book may enable you to reverse. As with authors, so with subjects. It is easy to say to oneself, "Oh, I never read books about travel, or about foreign policy, or about the last war but three "-or American thrillers, or psychological novels, or whatever it may be. If you are choosing books to buy, especially at to-day's prices, it is only natural to follow your own established taste. But if books come your way—as, for instance, if you are staying with friends and pottering about their bookshelves to find something to read on a sleepy Sunday afternoon—it will often be worth picking out something which you would never

have chosen for your own library.

These sage reflections arise from the fact that not a single one of the twelve books on my list this week is of a kind which I would myself have selected, with delightful recognition of a favourite writer or of a favourite subject. But I have had some agreeable surprises. Take, for instance, Mr. Richard Pape's Sequel to Boldness, a postscript to his famous "Boldness Be My Friend." Fourteen long years have passed since the end of the war, and I do not want to be reminded of the emotions which it aroused-whether of admiration for valour, or of disgust for brutalityover and over again. But Mr. Pape's book is singularly moving. It tells of the fate which overtook the members of Dutch families who helped and sheltered him when his 'plane crashed in Holland in 1941, and of his own determination, when the war was over, to discover the traitor who was responsible for their execution by the Nazis and to murder him. It was the survivors of these families, with their feelings of Christian forgiveness and compassion, who changed his whole purpose. In the end, he found the traitor, and they talked together. When he left him, Mr. Pape writes: "My mind floated in a swirling sea of hate and love: a hatred of war and a growing love of mankind. . . . I walked to a bus-stop, my mind throbbing a sentence: 'Dirty, rotten, bloody war'." This is not a well-written book. It is a mass of bits and pieces, formless and often incoherent. But I found much of value in its incoherence.

A second book of this kind is my friend Christopher Sykes's life of Orde Wingate. Mr. Sykes is a writer of some distinction, and I am second to none in my admiration of what General Wingate achieved in Burma with his Chindits. But I was far from certain that I wanted to plough through more than 500 pages rehashing the great story—any more than I would wish to re-read the campaigns of Marlborough or of Wellington. However, Mr. Sykes defeated me. His careful analysis of Wingate's character, with its Puritanism, eccentricity, aloofness and unorthodoxy, is, in its way, a masterpiece. You may think what you like—and I myself hold strong views-about the various causes which Wingate championed before he earned the epic praise accorded to him in the House of Commons by Winston Churchill. But once you have picked up this book, you will find it difficult to

put down.

I had the same experience, only in a more marked degree, with Miss Eileen Bigland's MARY Shelley. Fathers of teen-age children, such myself, tend to talk, with helpless despair, of the antics of our own "beat" generation—although I have never quite fathomed whether that word means "beaten," or connotes some kind of rhythm. ("Oh Daddy! Surely even you know what it means!") But I really believe that few of them make such a helpless cat's-cradle of their lives as that which was made by Shelley, and in which he involved so many women, most of whom have always seemed to me to be of unexampled dullness. The whole story, of course, involves people like Byron and those dreadful Leigh Hunts. If I want to enjoy such of their poetry as is enjoyable—and by far the greater proportion of it is quite unenjoyable by anyone—I find that I have to forget all about the squalid disorder in which they lived. Here again, Miss Bigland has corrected a misapprehension. I find that Mary Shelley had a character of her own which was far from negligible, quite apart from her authorship of "Frankenstein." So that is another

Biographies abound this week. Miss E. Carleton Williams has taken on that formidable figure BESS OF HARDWICK and made, as one might suppose, a very competent and interesting study

of her. Anyone of great position who was born in 1520 and survived to see the reign of James I, with a mere two imprisonments in the Tower, earns one's startled admiration. When one remembers that Bess was four times married, and included among her husbands Sir William Cavendish and the Earl of Shrewsbury, and also that she was gaoler-hostess to Mary Queen of Scots, with whom she used to undertake the production of complicated and not very impressive embroidery, one's admiration at her determined survival surpasses all bounds. She was toughand she had to be.

<u> ECONOCIONAL CONTRACTOR DE CO</u> CHESS NOTES.

By BARUCH H. WOOD, M.Sc.

"HOW long will it be before first-class chess can be played by electronic computers?" To he played by electronic computers?" To this fascinating question I have returned more than once in these columns. "At least a century," I maintain. An impartial judge might detect in me a slight "hostile witness" bias. "A decade at most" is the view of C. H. O'D. Alexander, if I correctly interpret the opinions of his which I have

An article by George Boehm in the latest issue of Fortune supports—I cannot help feeling—my outlook. I had thought that the lack of commercial

or Fortune supports—I cannot help feeling—my outlook. I had thought that the lack of commercial stimulus might divert attention right away from chess. You don't pick up much money by winning game of chess, whereas there are millions to be made by tackling statistics of consumer research, or involved mathematics concerning shapes of ships' hulls or bridges or evaluation of oil-bearing strata. So, I thought (and Alexander agreed), even if it were to become possible to invent a chessplaying machine, nobody might bother to do so.

But apparently chess offers unique advantages as research tool. As the Massachusetts Institute of Technology mathematician Claude Shannon has declared: "Chess is a compact little universe. It is simplified and abstracted form of what we face in the physical world. It has conflict, logic, goals and rules. If we can puzzle these out, we will have clues for the more important and complex things." Researchers in the field of electronics have made some of their most significant advances through the study of chess. study of chess.

It is very easy, however, to over-estimate this compactness of chess. "For all practical purposes," writes Professor Boehm, "chess is impossible to analyse exhaustively. On most plays, a player has a choice of twenty to thirty moves; not even the fastest computer could study all the possibilities that might follow one move" (—"in reasonable time" is implied). "Human players simplify the problem by eliminating most of the possible moves and concentrating on those their judgment tells them are promising. It is this kind of judgment that researchers want to build into computer programmes." programmes."

Alex Bernstein's I.B.M. chess computer has played, and beaten, beginners but loses to any passable amateur because the machine only looks ahead four moves, two by each player. Chugging away for an hour or so, working out every conceivable two-move combination (including many thousands of inconceivably stupid ones), the machine is blind to a three-move operation which any good player would see in a flash. His machine does evaluate such factors as the advantages of castling evaluate such factors as the advantages of castling, evaluate such factors as the advantages of castling, capturing a piece, etc. Then it selects the seven most "valuable" moves and analyses each for two moves ahead on each side. "Thus, to make a move, the machine has to evaluate only $7 \times 7 \times 7 \times 7$ positions. Even so, it takes an average of eight minutes to make a move." (And the most lavish time-allowance per move in the whole range of master chess, that of World Championship matches, is less than four.)

According to Professor Boehm, a more elaborate—and even more cumbersome—chess-playing programme is being developed in America right now; by Allen Newell and J. C. Shaw, of Rand Corporation, co-operating with Herbert Simon, of Carnegie Tech. They aim to make the machine evaluate various less material considerations, such as control of the centre of the board (there are dozens of others, as I have pointed out in previous articles). "It is estimated that the machine will spend one to ten hours on each move."

I still feel chess is safe for my lifetime!

Once more, I put the week's novels second to the non-fiction. Miss Natala de la Fère has written a pleasant, light little piece about a girl call Nina, who had a charming, if feckless, mother, and a succession of disastrous stepfathers. ALL MY FATHERS.

TO THE RESIDENCE OF THE PARTY O

I never cease to complain about novels which are far too long. Captious as ever, I am now going to complain about one which is far too short. If you are going to write a bare 100 pages, with a bare 150 words to a page, about a little Spanish boy who escapes from a reformatory, witnesses a motor accident, and has a vision, those pages have to be very good indeed. I wish I could say that Mr. MacKinlay Kantor has brought it off, in his THE UNSEEN WITNESS, but I'm afraid that I can't. This book is nearly good-but a miss, at this target, is as good as a mixed-metaphorical mile. Another disappointment was Jean-Claude Carrière's Monsieur Hulot's Holiday.

This, I am told, is the book of Jacques Tati's famous film (which I missed seeing). As a film, I dare say it was a wow. As a book, it contains plenty of nice observation about the French middle-class at the seaside, but M. Hulot himself is pure

There is much to be said for Mr. John Brophy's THE DAY THEY ROBBED THE BANK OF ENGLAND, if you like a fairly conventional thriller. The idea is good, but I didn't care for the way in which the plans of the hero-villain were thwarted. Jealous Austrian mistresses are a bore. So-and, with a sinking heart, I return to the military theme-and what Auntie Times used to describe so pleasantly as "revolting tribesmen." Mr. Gerard Bell has, however, contrived to give THE Prisoner at Jala a nice interplay of background and attitude among the British forces involved. There is a major, the son of a sergeant-major, and a captain, the son of a general. The latter disapproves of the whole operation to which the British are committed—and there you have it. Or, rather, it is not quite as simple and obvious as my bald account might indicate. There is a twist in the tail which takes this story well out of the rut in which the author seems to have embedded both himself and his characters.

I don't like Americans with names like Joe Dust. I don't like research scientists. But I did like Mr. Peter Graaf's The Sapphire Conference, which contains all these ingredients. It also contains four splendid murders, a full confession by the murderer, and a suicide. Now that is really good value for money, and I found the book pleasantly exciting.

Mr. C. S. Forester is, of course, the author of all those "Hornblower" books, so he can write about naval matters with some confidence. His latest book is a graphic account of one of the greatest actions of the last war, called Hunting THE BISMARCK. In a concluding note, Mr. Forester writes: "This is the story as it may have happened. The speeches are composed by the writer, who has no knowledge that those words were used; but the writer has no doubt that similar speeches were made." This sounds rather cold, but the book itself is anything but cold. The pursuit of the Bismarch lasted six days, in storm conditions, and her final sinking was a glorious triumph for the Royal Navy. "This is," as Mr. Forester writes, in his less composed vein, "a story of the most desperate chances, of the loftiest patriotism and of the highest professional skills, of a gamble for the dominion of the world in which human lives were the stakes on the green gaming table of the ocean." It is a story which tells itself. But Mr. Forester adds much to it by the imagination and generosity with which he tells it. He recognises the heroism of the German resistance. And when he has drawn a superbly exciting picture of the battleship's last agony, he calls it a "horrible sight." So, indeed, it must have been.

Finally, I should like to welcome a new book in the Brompton Library series: Instruc-TIONS TO YOUNG PHOTOGRAPHERS, by Houston Rogers, whose own work is so well known to readers of The Illustrated London News. It is a first-class book for reference during the summer holidays.

BOOKS REVIEWED.

SEQUEL TO BOLDNESS, by Richard Pape. (Odhams; 18s.)

ORDE WINGATE, by Christopher Sykes. (Collins;

MARY SHELLEY, by Eileen Bigland. (Cassell; Bess of Hardwick, by E. Carleton Williams.

(Longmans; 25s.) ALL My FATHERS, by Natala de la Fère.

(Michael Joseph; 13s. 6d.)
THE UNSEEN WITNESS, by MacKinlay Kantor. (W. H. Allen; 10s.) Monsieur Hulot's Holiday, by Jean-Claude

Carrière. (Heinemann; 15s.) THE DAY THEY ROBBED THE BANK OF ENGLAND, by John Brophy. (Chatto and Windus; 15s.)
THE PRISONER AT JALA, by Gerard Bell.

(Hutchinson; 15s.)
THE SAPPHIRE CONFERENCE, by Peter Graaf. (Michael Joseph; 13s. 6d.)
HUNTING THE BISMARCK, by C. S. Forester.

(Michael Joseph; 12s. 6d.)
Instructions to Young Photographers, by

Houston Rogers. (Museum Press; 12s. 6d.)





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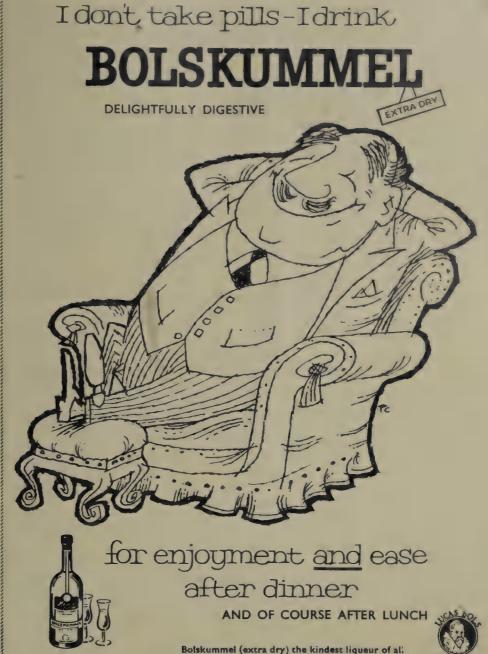
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WATCH-MAKING might seem a relatively unimaginative profession, but the Swiss have always done their best to make an art of it. Who else would have thought of a time-keeper in the form of a tulip-bud, an anchor, a stringed instrument, or a butterfly with multi-coloured enamel wings studded with rose diamonds? Just such objects appeared recently in a sale at Christie's, along with a collection of fascinating scent-bottles and a rare Meissen rococo chess-set. One of the most interesting objects in this sale was a delightfully feminine pistol which could be used to smother an assailant in scent, and then, by reference to a watch concealed in its butt, to record the exact time of the assault.

Another rare collector's piece sold recently in London was the 15th-century Venetian glass beaker, only 3\frac{1}{2} ins. high, known as the "Fairfax Cup," ingenuously decorated with the tale of Pyramus and Thisbe. This was sold at Sotheby's on March 20 for \(\frac{1}{2} \) 600. Some weeks later a large collection of etchings by Camille Pissarro was auctioned in the same sale-room. Many of these, the property of the artist's granddaughter, Miss Orovida Pissarro, had been discovered in Pissarro's studio at his death, or had been included in his letters to his son Lucien.

Just over six months ago Sotheby's sold seven 19th-century French paintings from the Goldschmidt Collection for the record total of £781,000, which included the astonishing sum of £220,000 paid for Cézanne's "Garçon au Gilet Rouge." On May 6 another collection of Impressionist and modern paintings is to be auctioned in the same sale-room. And although this can scarcely be expected to rival the Goldschmidt sale, bidding is sure to be keen for such outstanding works as the brilliant and



COLLECTORS &

arresting "Self-Portrait" by Cézanne, painted as if from over the artist's shoulder.

It is a rare occasion indeed when a living British statesman eclipses a record previously held by Leonardo da Vinci. But this is what took place at the end of March, when already more than 39,000 people had visited the Diploma Gallery at the Royal Academy to see the paintings by that Honorary Academician Extraordinary, Sir Winston Churchill. The previous highest figure had been recorded for the Leonardo da Vinci Exhibition in 1952.

Two exhibitions that could almost be labelled "nostalgic" have recently created much interest in London; that of Rodin's bronzes at Messrs. Roland, Browse and Delbanco, and the Retrospective Exhibition of paintings by Christopher Wood at the Redfern Gallery. Opinions clash about both artists, although it is perhaps hardly fair to the great French sculptor to link their names so closely. Nevertheless, linked they inevitably are, since the two exhibitions are next-door to one another. Both have, in any case, provided a rare opportunity for re-assessment; and, of the two, Rodin, seemingly the more out of sympathy with the present age, stands the test of time with the greater distinction. Wood, however gifted an artist he remains, suffers a little from his imitators, and from being less of a bright lone star than at the time of his death.

Two large paintings from current exhibitions in London stand out in the mind; a landscape of overwhelming tranquillity by John Crome, at Colnaghi's, and a delicate river scene by Salomon van Ruysdael at the Hallsborough Gallery. They show the two artists in their best vein, and are fine representatives of the English and Dutch landscape traditions at great moments in their

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